Exhibit M 1

STATE OF SOUTH CAROLINA)
)
COUNTY OF GREENVILLE)

PUMP STATION AND FORCE MAIN AGREEMENT

THIS PUMP STATION AND FORCE MAIN AGREEMENT is made and entered into on this 8 day of March, 2005, by and among WWW.WHITEHORSEROAD, LLC and HILTON RESOURCES, LLC both South Carolina Limited Liability Companies (collectively referred to as "WHR"); WHITE HORSE ROAD PROFESSIONAL PARK POA, INC. (the "Association") a non-profit South Carolina Corporation and CONDOR ENVIRONMENTAL O&M, LLC ("Condor"), a South Carolina Limited Liability Company; and BEREA PUBLIC SERVICE DISTRICT ("Berea"), a South Carolina Special Purpose District.

WITNESSETH:

WHEREAS, WHR is currently developing an office park, White Horse Road Professional Park, in Greenville County, South Carolina, on the property which is described on Exhibit A, hereto attached and made a part hereof (the "Premises"); and

WHEREAS, WHR owns the property and the Association will become the governing association for the White Horse Road Professional Park; and

WHEREAS, the development plan for the White Horse Road Professional Park provides for a total of up to 30 office units in 15 buildings with a maximum design wastewater flow of 3,750 gpd which will be served by the Pump Station and Force Main as hereinafter defined; and

WHEREAS, Pump Station and Force Main service will be provided to White Horse Road Professional Park by Condor upon dedication of the Pump Station and Force Main to Condor; and

WHEREAS, due to the topography of the land on which White Horse Commons is being developed, a Pump Station and Force Main will be required to be installed; and

WHEREAS, gravity sanitary sewer service will be provided to White Horse Commons by Berea upon approval by Berea and dedication of the gravity lines to Berea; and

WHEREAS, Condor has agreed to assume the ownership and maintenance responsibility for the Pump Station and Force Main to be located on the property described in Exhibit B in accordance with the terms and provisions of this Agreement;

NOW, THEREFORE, for and in consideration of the foregoing premises, and of the mutual covenants of the parties herein set forth, the parties hereto hereby agree as follows:

1. COMPLETETION AND CONVEYANCE OF PUMP STATION AND FORCE MAIN. WHR agrees to design and complete the construction of the Pump Station and Force Main in accordance with the plans and specifications for the Pump Station and Force Main prepared by Civil Consulting and Design, LLC (the "Engineer") that meet the requirements of Condor and Berea and including an appropriate portable standby electrical generator, not to exceed Two Thousand Dollars ($2,000.00) in cost, if required by the South Carolina Department of Health and Environmental Control ("DHEC") and which will include a standby pump and to cause the Pump Station and Force Main to be approved to operate by the DHEC. WHR, or if then in existence the Association, agrees that at such time as the actions described in the foregoing sentence shall have been completed, WHR or the Association shall transfer and convey the Pump Station and Force Main to Condor along with all necessary and appropriate easements. At the time of said transfer and conveyance, WHR or the Association shall also assign to Condor all warranties which shall have been made to WHR or the Association, or which shall have been deemed to have been made to the Association, by the Contractor and the Engineer in regard to the Pump Station and Force Main and the plans and specifications for the Pump Station and Force Main.

Condor agrees that, during construction and prior to the transfer and conveyance of the Pump Station and Force Main to it, that it will conduct such inspections of the Pump Station and Force Main as Condor shall deem necessary to satisfy itself as to the condition of the Pump Station and Force Main and WHR agrees to pay Condor's reasonable fees and costs of such inspections. WHR additionally agrees to pay Condor's reasonable attorney fees associated with this Agreement, construction of the Pump Station and Force Main, and transfer of the Pump Station and Force Main to Condor.

2. OPERATION OF PUMP STATION AND FORCE MAIN. Condor agrees to accept the transfer and conveyance to it by WHR or the Association of the Pump Station and Force Main and thereafter to operate, repair, maintain and replace the same in accordance with the terms and provisions of this agreement.

Condor shall operate and maintain the Pump Station and Force Main so that all buildings served by the Pump Station and Force Main shall receive continuous adequate sanitary sewer service without interruption. The repair, maintenance and replacement responsibilities of Condor under this Agreement shall include the replacement of all parts of the Pump Station and Force Main which shall become worn out or obsolete and the making of all capital repairs and replacements as shall be necessary in order for Condor to carry out its obligations under this Agreement without interruption.

Condor shall operate and maintain the Pump Station and Force Main so that the same will at all times comply with and fulfill all governmental laws, rules and regulations that shall be applicable to the operation and maintenance of the Pump Station and Force Main.

Without limiting the generality of the forgoing, Condor shall operate and maintain the Pump Station and Force Main in accordance with all rules and regulations which shall be promulgated at any time, and from time to time, by Berea for privately owned and maintained sanitary sewer Pump Stations and Force Main which are part of the sewage collection system operated by Berea. In addition, Condor shall comply with all policies and requirements of South Carolina Public Service Commission or other appropriate governmental agencies which may be applicable to the Pump Station and Force Main costs and expenses which it shall incur in connection with the carrying out of its duties and responsibilities under this Agreement.

3. PAYMENT BY WHR AND THE ASSOCATION. The Association, hereby agrees that in consideration for the performance by Condor of its duties and obligations under this Agreement, WHR or the Association shall pay to Condor the amount of One Thousand Dollars ($1,000.00) (the "Monthly Fee") per month beginning at the initial operation of the Pump Station to serve the development. The first Monthly Fee shall be prorated in proportion to the fraction of the month the Pump Station and Force Main are in operation

Upon complete transfer of ownership and control of the Association from WHR to the owners, the Association shall establish and deliver to Condor an irrevocable letter of credit from a bank located in Greenville or Spartanburg County, South Carolina in the amount of Twelve Thousand Dollars ($12,000.00) to guarantee the payment by the Association of the Monthly Fee to Condor. The letter of credit is to have a term of twenty-four (24) months. The Association agrees to renew and maintain the letter of credit or to maintain a Twelve Thousand Dollars ($12,000.00) cash escrow to guarantee the payment of the Monthly Fee.

The Association shall pay the Monthly Fee to Condor on or before the tenth day of each calendar month by means of a check made payable to Condor and mailed or otherwise delivered to the address herein below provided. In the event that or the Association shall at any time fail to pay to Condor the Monthly Fee within thirty (30) days of the due date, Condor shall have the right to draw the Monthly Fee plus ten percent (10%) of the Monthly Fee as a delinquency charge from WHR or the Association from the Letter of Credit upon presentation of such unpaid invoice and an accompanying notarized statement that payment plus penalty are due. Condor shall at all times be responsible for the continued performance of its duties and obligations under this Agreement.

Upon no less than ninety (90) days prior notice to WHR or the Association, Condor shall have the right to increase the amount of the Monthly Fee at any time, in order to compensate Condor for any reasonable increase in the cost and expense to Condor of performing its responsibilities under this Agreement, and further provided that the increase in the Monthly Fee shall not be increased by more that five (5%) percent in any twelve month period. Notwithstanding the foregoing, Condor shall not increase the amount of the Monthly Fee because of any fine or penalty assessed by any regulatory agency to Condor for any act or omission by Condor for repairs or replacements to the Premises, including the Pump Station and Force Main, that are the result of the negligent or intentional acts or omissions of Condor.

4. APPROVAL BY BEREA. Berea hereby consents to the terms of this Agreement and agrees that at such time as the Pump Station and Force Main shall be transferred and conveyed by WHR to Condor, Berea will accept the discharge from the Pump Station and Force Main owned and operated by Condor.

5. RESERVE ACCOUNT BY THE ASSOCIATION. WHR shall pay to Condor, at the execution of this Agreement, the amount of Three Thousand Five Hundred Dollars ($3,500.00) as an initial payment into a reserve account for the purposes and uses herein provided, immediately prior to the initial operation of the Pump Station and Force Main to serve the development WHR shall pay to Condor an additional amount of Three Thousand Five Hundred Dollars ($3,500.00) into a reserve account. The parties hereto agree that the reserve account may be drawn on by Condor for providing casualty insurance which shall be carried and maintained by Condor for the Pump Station and Force main, and for replacement of the Pump Station or Force Main, or any portion thereof, if damaged by accident, vandalism or other disaster. Further, all or any portion of said reserve account may be used by Condor to pay for the costs and expenses of emergency repairs. At the end of five years or if the Pump Station and Force Main is replaced by gravity sewer, or the ownership and operation of the Pump Station and Force Main is transferred to and assumed by a public entity having jurisdiction and authority, the reserve account shall terminate and all funds remaining therein including any interest shall become the property of Condor.

6. NOTICES. Any notices which may be permitted or required under the terms and provisions of this Agreement shall be in writing and shall be deemed to have been duly given, except as otherwise provided in this Agreement, as of the date and time are received by the parties to whom the notices are sent. Such notices shall be deemed received upon hand delivery or by Federal Express or equivalent courier and evidenced by a notation on the records of that courier that such notices were delivered to the parties at the following addresses or at such other address as a party shall notify the other parties in writing:

(a) WWW.WhiteHorseRoad, LLC
14 McKenna Commons Ct
Greenville, SC 29615

(b) Hilton Resources, LLC
14 McKenna Commons Ct
Greenville, SC 29615

(c) Condor Environmental O&M, LLC
P.O. Box 10005
Greenville, SC 29603

(d) White Horse Road Professional Park POA, Inc.
c/o WHR
14 McKenna Commons Ct
Greenville, SC 29615

(f) Berea Public Service District
7401 White Horse Road
Greenville, SC 29611

7. TERM. The term of this Agreement shall commence on the date on which this Agreement shall be executed by all parties hereto and shall continue in full force and effect until such time, if any, as Condor shall have transferred and conveyed the Pump Station and Force Main to a governmental subdivision of the State of South Carolina which shall have all power and authority necessary to operate and maintain the Pump Station and Force Main and shall have agreed with WHR and the Association to do so.

If for any reason Condor Environmental O&M, LLC, or its assigns, does not fulfill their obligation to maintain the pump station and force main, then the Association will assume the obligations of Condor as set forth herein and Condor will transfer and convey ownership of the pump station and force main back to the Association at no charge to the Association

In addition to the above, this Agreement may terminate in the following ways:

(a) This Agreement will terminate if a public entity agrees to assume the operation of the premises;

(b) If the Pump Station and Force Main is replaced by a gravity sewer line, the Agreement shall terminate effective upon the date that the gravity sewer line is placed into operation;

(c) Condor may terminate the Agreement upon ninety (90) days prior written notice to the Association, provided that prior to termination Condor has identified for the Association and the Association has approved a successor entity that is properly qualified and licensed to enter into an Agreement substantially similar to this Agreement or into an Agreement reasonable satisfactory to The Association to operate the Pump Station and Force Main. Condor shall at all times be responsible for the continued performance of its duties and obligations under this Agreement until the successor entity has assumed the obligations under this Agreement.

(d) The Association may terminate the Agreement upon thirty (30) days prior written notice to Condor, if (i) any performance standard included within this Agreement is not met for a cumulative period of fourteen (14) days or more during any rolling twelve (12) month period; or (ii) a sewage back up in any office, caused by the Pump Station or Force Main, occurs four (4) or more times during any twelve (12) month

period; or (iv) a sewage overflow out of the Pump Station or Force Main, occurs four (4) or more times during any rolling twelve (12) month period. In the event of any default of Condor of any of these conditions, Condor agrees to promptly deed the Pump Station and Force Main premises back to the Association without consideration.

8. BEREA APPROVAL. Notwithstanding the foregoing, however, any operation of the Pump Station and Force Main by any person, party or entity other than Condor, as herein provided, shall be subject to the approval of Berea and the South Carolina Department of Health and Environmental Control. Upon the approval of said transfer and conveyance to a third party operator by such a governmental authority and the completion of said transfer, Condor shall be automatically released from all further duties or obligations under the terms of this Agreement.

9. APPLICATION OF LAWS. This Agreement is governed by the laws of South Carolina.

10. AMENDMENTS. This Agreement and any provision herein contained may be modified or amended only by the express written consent of all of the parties hereto or their successors or assigns.

11. ASSIGNMENT. This Agreement and the obligations of Condor may not be assigned to any other party without the express written consent of the Association.

12. WAIVER OF DEFAULT. No waiver of any default by any party hereto will be implied form the failure by any other party to take action with respect to such default. No express waiver of any default will affect any default or extend any period of time for performance other than as specified in such express waiver. One or more waivers of any default in the performance of any provision of this Agreement will not be deemed a waiver of any subsequent default in the performance of the same provision or any other provision. The consent to or approval of any subsequent similar act or request by any party hereto will not be deemed to waive or render unnecessary the consent to or approval of any subsequent similar act or request. The rights or remedies provided by this Agreement are cumulative and no right or remedy will be exclusive of any other, or of any other right or remedy at law or in equity which any party hereto might otherwise have by virtue of a default under this Agreement. The exercise of any right or remedy by any party hereto will not impair such Party's standing to exercise any other right or remedy.

13. SEVERABILITY. If any provision of this Agreement is, to any extent, declared by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement (or the application of such provision to persons or circumstances other than those in respect to which the determination of invalidity or unenforceability was made) will not be affected thereby and each provision of this Agreement will be valid and enforceable to the fullest extent permitted by law.

14. CAPTIONS. The captions of the sections of this Agreement are for convenience only and are not intended to affect the interpretation or construction of the provisions herein contained.

15. BINDING EFFECT. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors and assigns.

16. ENTIRE AGREEMENT. This Agreement constitutes the sole and only agreement of the parties hereto and supersedes any prior understanding or written or oral agreements between the parties respecting the within subject matter, and may be amended only by a writing signed by the parties hereto.

The remainder of this page is blank.

IN WITNESS WHEREOF, the parties hereto each of who being duly authorized have set their hands and seals on the day and year first above written.

WWW.WHITEHORSE ROAD, LLC

By: _____

Its: Mayor / Member

DATED: 3-7-05

HILTON RESOURCES, LLC

By: John H. Broadbent

Its: PResedent

DATED: 3-7-05

WHITE HORSE ROAD PROFFESSIONAL PARK POA, INC.

By: _____

Its: Mayor / Member

DATED: 3-7-05

CONDOR ENVIRONMENTAL O&M, LLC

By: Samuel D. Weaver

Its: President

DATED: 3-2-05

BEREA PUBLIC SERVICE DISTRICT

By: George E Conrad

Its: Supervisor

DATED: 3-8-05

Exhibit M 2

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Appalachia II
Environmental Quality Control
301 University Ridge, Suite 5800
Greenville SC 29601-3677
864 241-1090 Fax: 864 241-1092

Serving
Greenville and Pickens Counties

Wastewater System Construction

APPROVAL TO PLACE INTO OPERATION

ISSUED TO: WHITEHORSE ROAD LLC
14 MCKENNA COMMONS CT
GREENVILLE SC 29615

for the operation of a wastewater treatment/collection system permitted under construction permit 30502-WW, dated November 23, 2004, as described below

PROJECT NAME: WHITEHORSE COMMONS PUMP STATION
COUNTY: Greenville
PROJECT DESCRIPTION: Construct a duplex 28-gpm grinder pump station 700 LF of 2" PVC force main.

PERMITTED FLOW: 0 gallons per day
WWTP: WESTERN CAROLINA REG SWR AUTH (SC0041211)

SPECIAL CONDITIONS:

1. An executed (signed) Pump Station & Force Main Agreement must be in place between WHITE HORSE COMMONS LLC, WHITE HORSE COMMONS PROPERTY OWNERS ASSOCIATION LLC, CONDOR ENVIRONMENTAL O&M LLC and BEREA PSD before an Approval to Place in Operation can be granted.
2. The on-site sewer, pump station and force main can be installed, but no flow will accepted until the 18-inch parallel gravity sewer (Permit to Construct #29,877-WW) has been constructed, certified and placed into operation.

This approval is based on the Engineer's letter of certification signed by James McCutchen, P.E., South Carolina Registration No. 18343.

Guy A Tumblin, District Engineer
Environmental Quality Control
APPALACHIA II EQC District Office

Date Issued: June 08, 2005
Inspected 6/7/05

cc: Bureau of Water Permitting File
Local Environmental Health Office
Local Codes Department
James McCutchen, P.E.

Exhibit M 3

BOOK 2150 PAGE 1052

EXEMPT

JUN 17 2005

FILED
GREENVILLE, SC

2005 JUN 17 P 4:07

TIMOTHY L. HANNEY
REGISTER OF DEEDS

Grantee's Address: P. O. Box 10005
Greenville, SC 29603

STATE OF SOUTH CAROLINA)
)
COUNTY OF GREENVILLE)

QUIT CLAIM DEED

KNOW ALL MEN BY THESE PRESENTS THAT, WWW.WHITE HORSE RD, LLC, a South Carolina limited liability company, as Grantor, in consideration of the sum of **Ten Dollars ($10.00) Dollars** and no other consideration, the receipt of which is hereby acknowledged, has granted, bargained, sold, remise, release and quitclaim unto **CONDOR ENVIRONMENTAL O&M, LLC,** its successors and assigns forever, Grantor's right, title and interest in the following described property:

(See attached Exhibit "A" for property description.)

308-23.4-1-31

Further, the above described property is conveyed subject to all easements, restrictive covenants and rights of way of record; those easements, restrictive covenants and rights of way actually existing on the ground and affecting said property; such matters as would be revealed by a current survey and inspection of the property; and any applicable building and zoning laws and ordinances.

54187

COPY

The easement is to and does convey to the Grantee, its successors and assigns the following: The right and privilege of entering the aforesaid strip of land to maintain and operate within the limits of same, pipe lines, manholes, and any other adjuncts deemed by the Grantee to be necessary for the purpose of conveying sanitary sewage and industrial wastes, and to make such relocations, changes, renewals, substitutions, replacements and additions of or to the same from time to time as said Grantee may deem desirable; the right at all times to cut away and keep clear of said pipe lines any and all vegetation that might in the opinion of the Grantee endanger or injure the pipe lines or their appurtenances, or interfere with their proper operation or maintenance; the right of ingress to and egress from said strip of land across the land referred to above for the purpose of exercising the rights herein granted; provided that the failure of the Grantee to exercise any of the rights herein granted shall not be construed as a waiver or abandonment of the right thereafter at any time and from time to time exercise any or all of same. No building shall be erected over said sewer pipe line or easement granted herein, nor shall be erected so close thereto as to impose any load thereon.

It is Further Agreed: That in the event a building or other structure should be erected contiguous to said sewer pipe line, no claim for damages shall be made by the Grantor, his heirs or assigns, on account of any damage that might occur to such structure, building or contents thereof due to the operation or maintenance, or negligence of operation or maintenance, of said pipe lines or their appurtenances, or any accident or mishap that might occur therein or thereto.

The payment and privileges above specified are hereby accepted in full settlement of all claims and damages of whatever nature for said easement.

TOGETHER WITH all and singular the rights, members, hereditaments and appurtenances to said premises belonging or in any wise incident or appertaining, including, without limitation, the right of ingress and egress to the above easement over and through land of Grantor; to have and to hold all and singular the premises before mentioned unto the Grantee, and Grantee's successors and assigns, forever, subject to the reservations, terms and provisions hereof.

GRANTOR WARRANTS AND REPRESENTS that the property and the rights and easements herein conveyed are not subject to any mortgage, judgment or lien other than for property taxes which are not yet past due, nor to any encumbrance which would interfere with Grantee's ability to operate, maintain, repair, replace, relocate or otherwise own and utilize the lines and system described above. And, the Grantor does hereby bind itself and its successors to warrant and forever defend all and singular said premises unto the Grantee and the Grantee's successors and assigns against the Grantor and the Grantor's successors and assigns and against every person whomsoever lawfully claiming or to claim the same or any part thereof.

COPY

2

BOOK 2150 PAGE 1054

TOGETHER with all and singular, the Rights, Members, Hereditaments and Appurtenances to the said Premises/Property belonging, or in any wise incident or appertaining;

TO HAVE AND TO HOLD, all and singular, the said premises before mentioned unto the Grantee, and the Grantee's heirs and assigns forever. And the Grantor does hereby bind the grantor and the grantor's heirs or successors, executors and administrators to warrant and forever defend all and singular said premises unto the Grantee and the Grantee's heirs or successors and against every person whomsoever lawfully claiming or to claim the same or any part thereof.

Any reference to this instrument to the singular shall include the plural, and vice versa. Any reference to one gender shall include the others, including the neuter. Such words of inheritance shall be applicable as are required by the gender of the Grantee.

WITNESS the Grantor's hand and seal this 16th day of June, 2005.

Signed, sealed and delivered in the presence of:

WWW.WHITE HORSE RD, LLC
a South Carolina limited liability company

BY: _____
Its : Manager Member

STATE OF SOUTH CAROLINA)
) **PROBATE**
COUNTY OF GREENVILLE)

PERSONALLY APPEARED BEFORE ME the undersigned witness and made oath that (s)he saw the within named WWW.White Horse Rd, LLC, by its duly authorized member, sign, seal and as its act and deed, deliver the within-written Title to Real Estate and that (s)he, with the other witnesses subscribed above, witnessed the execution thereof.

SWORN to before me this 16th day of June, 2005.

Notary Public for South Carolina
My Commission Expires: 2-13-11

COPY

BOOK 2150 PAGE 1055

EXHIBIT "A"

An easement in and over land of Grantor(s) situate in the above State and County and as shown as a 25' Sanitary Force Main easement on a certain plat entitled "Group Development for Whitehorse Professional Park", dated March 28, 2005, prepared by Precision Land Surveying, Inc., Richard B. Cook, II, PLS #17219 Surveyor, and recorded in the ROD Office for Greenville County in Plat Book 49Z, at Page 2. The aforesaid easement is for the purpose of operation, maintenance, repair, replacement of a force main sewer, valves, adjuncts and appurtenances. The width of the right of way is 25 foot (+/-). The length of the sanitary sewer pipe is 600 linear feet (+/-).

All that certain piece, parcel or lot of land with improvements thereon, situate, lying and being in the State of South Carolina, County of Greenville, being shown and designated as **Lots 31** as shown on a plat entitled, "Group Development for White Horse Professional Park", prepared by Precision Land Surveying, Inc., Richard B. Cook, II, P.L.S. #17219, Surveyor, dated March 28, 2005, and recorded in the Office of the Register of Deeds for Greenville County, in Plat Book 49Z, Page 2 , reference being made to said plat for a more complete metes and bounds description thereof.

This being a portion of the property conveyed to the Grantor by White Horse Road Holdings, LLC by deed dated August 13, 2004 and recorded August 17, 2004 in the ROD Office for Greenville County in Deed Book 2103, Page 1170.

FILED FOR RECORD IN GREENVILLE
COUNTY SC R.O.D. OFFICE AT 04:07 PM
06 17 05 RECORDED IN DEED
BOOK 2150 PAGE 1052 THRU 1055
DOC # 2005054187

COPY

Exhibit M 4

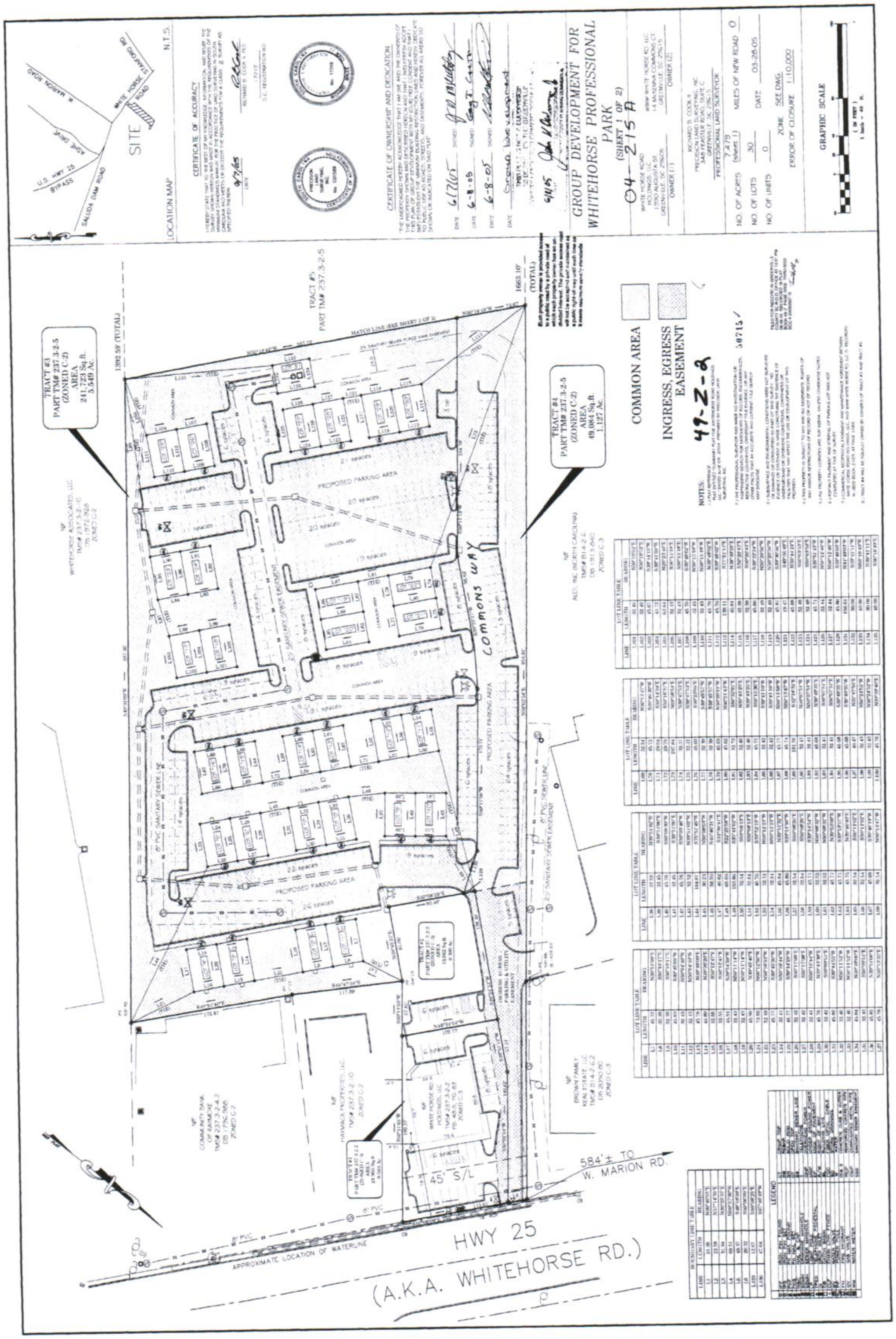
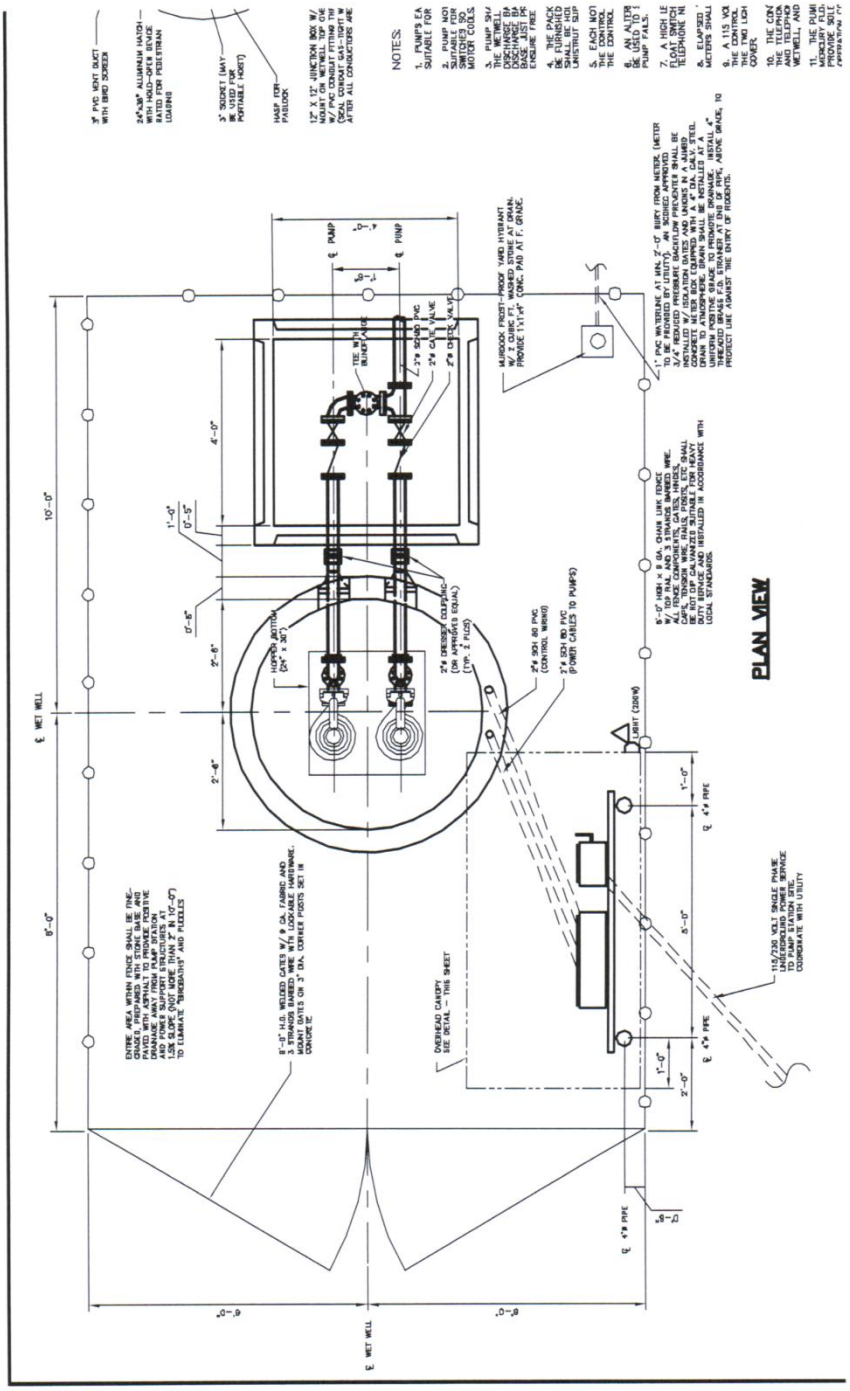
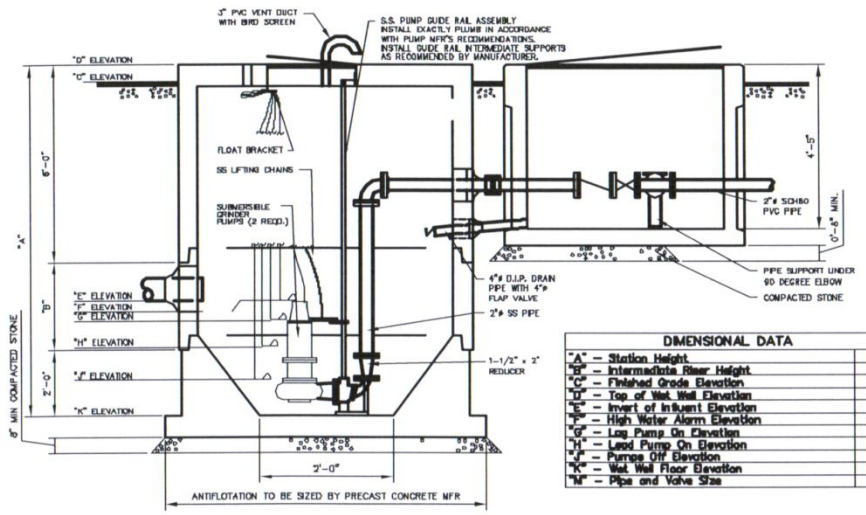

GROUP DEVELOPMENT FOR
WHITEHORSE PROFESSIONAL
PARK
HWY 25
(A.K.A. WHITEHORSE RD.)
COMMONS WAY
COMMON AREA
INGRESS, EGRESS
EASEMENT
PROPOSED PARKING AREA
45' S/L
584'± TO
W. MARION RD.
LOCATION MAP
SITE
GRAPHIC SCALE

Exhibit M 5



TO PUMP STATION SITE.
COORDINATE WITH UTILITY



SECTION

DIMENSIONAL DATA	
"A" – Station Height	13.00
"B" – Intermediate Riser Height	3.00
"C" – Finished Grade Elevation	987.5
"D" – Top of Wet Well Elevation	988.00
"E" – Invert of Influent Elevation	978.72
"F" – High Water Alarm Elevation	978.00
"G" – Lag Pump On Elevation	977.5
"H" – Lead Pump On Elevation	976.75
"J" – Pumps Off Elevation	976.00
"K" – Wet Well Floor Elevation	975.00
"M" – Pipe and Valve Size	2"

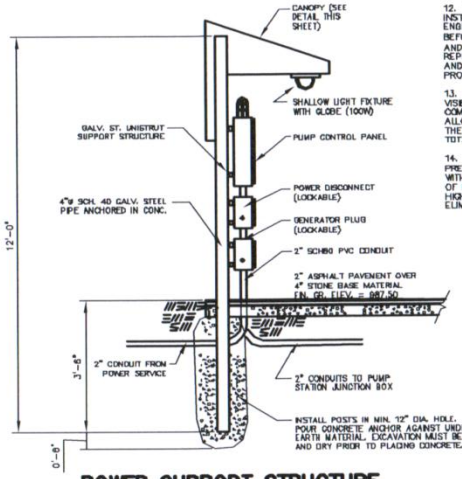
AND TELEPHONE
WETWELL, AND HI

11. THE PUMPS
MERCURY FLOAT
PROVIDE SOLE SO
OPERATION COMM

12. THE PACKAG
INSTRUCTIONS TO
ENGINEER PRIOR
BEFORE POWER IS
AND CERTIFY THE
REPRESENTATIVE
AND THE ENGINEE
PROVIDE FOR THE

13. CONCRETE W
VISIBLE EVIDENCE
COMPONENTS ARE
ALLOWED TO SIT
THE WET WELL TO
TOTAL WATER LOS

14. PVC WATER
PRESSURE RATING
WITH STANDARD
OF HEALTH AND
HIGHEST POINT,
ELIMINATE HIGH P



POWER SUPPORT STRUCTURE

1/2" EX

SUBMERSIBLE SEWAGE PUMP STATION

N.T.S.

JOB NO. C03078	CCAD Civil Consulting and Design	LOCATION GREENVILLE, SC
JOB NAME WHITEHORSE COMMONS		DATE 06-04-04

DESIGN FLOW CALCULATION

A SMALL SUBMERSIBLE GRINDER PUMP STATION IS PROPOSED TO SERVICE A PORTION OF A SMALL COMMERCIAL TRACT TO ACCOMMODATE FIFTEEN INDIVIDUAL OFFICE BUILDINGS, APPROXIMATELY 4,400 SQ. FT. EACH. THERE WILL BE NO RESIDENTIAL FACILITIES SUCH AS SHOWERS, LAUNDRY OR KITCHENS. TYPICALLY, THE OFFICES WILL BE OCCUPIED ONLY DURING BUSINESS HOURS EACH DAY AND WATER USE WILL BE ASSOCIATED WITH RESTROOMS AND KITCHENETTES OR SNACK AREAS.

MAX. DAILY DESIGN FLOW ESTIMATE IS BASED UPON A MAXIMUM 20 PEOPLE PER BUILDING.

20 PEOPLE x 15 BUILDINGS = 300

300 PEOPLE x 25 GPCD = 7,500 GAL/DAY

7,500 GPD ÷ 720 MIN (12 HRS) = 10.5 GPM

10.5 GPM x 2.5 PEAK FACTOR = 26.25 GPM

FORCEMAIN SELECTION

SELECT 2" PVC PIPE TO CONNECT PUMP STATION TO GRAVITY SEWER APPROXIMATELY 700 L.F. AWAY.

@ 26.25 forcemain velocity ≈ 2.5 ft/second (Ideal)

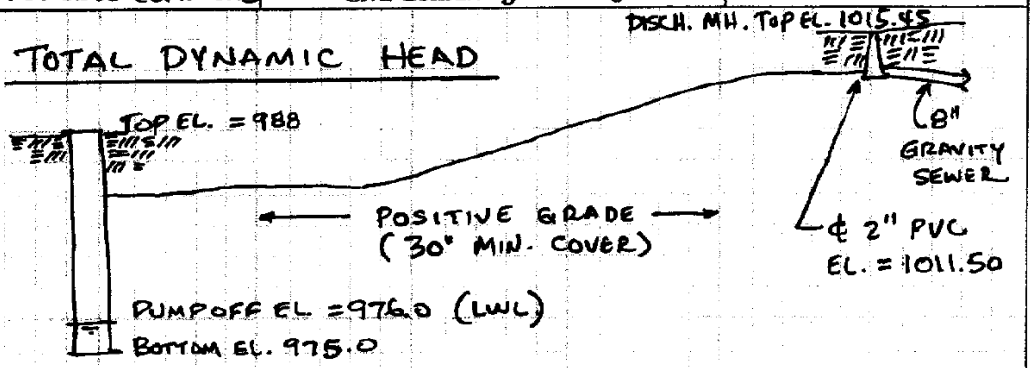
BASED UPON HAZEN-WILLIAM FORMULA, (CAMERON HYDRAULIC DATA)

HEAD LOSS DUE TO FRICTION CAN BE ESTIMATED TO BE APPROXIMATELY

2.5 FT./100' x 0.54 x 7 = 9.45 say 10'

JOB NO. C03078	CCAD Civil Consulting and Design	LOCATION GREENVILLE, SC.
JOB NAME WHITEHORSE COMMONS		DATE 06-04-04

TOTAL DYNAMIC HEAD



SKETCH
FORCEMAIN PROFILE
(NTS)

F.M. DISCHARGE ELEV. = 1011.50
LWL-PUMPOFF ELEV: -976.00

STATIC LIFT = 35.50 FT.

STATION LOSSES NEGLIGIBLE w/ 2" S.S. PIPING AND VELOCITIES RELATIVELY MINIMAL.

WITH TOTAL FRICTION HEAD ESTIMATED AT 10 FT.

TOTAL DYNAMIC HEAD $\cong$ 35.50 + 10 $\cong$ 45.50 FT.

PUMP SELECTION

TWO EBARA MODEL DGU SUBMERSIBLE SEWAGE GRINDER PUMPS ARE SELECTED TO PROVIDE FOR 100% STANDBY SERVICE.

123mm IMPELLERS w/ 2HP SINGLE-PHASE MOTORS ARE RECOMMENDED TO DELIVER 28 GPM AGAINST 50 FT. TDH. (SEE ATTACHED CURVE)

JOB NO. C03078	CCAD Civil Consulting and Design	LOCATION GREENVILLE, SC
JOB NAME WHITEHORSE COMMONS		DATE 6-4-04

WETWELL DESIGN

A 5'-0" PRECAST MANHOLE W/ STD. FLAT SLAB TOP IS SELECTED FOR INSTALLATION OF TWO RAIL-MOUNTED (DUPLEX) GRINDER PUMPS.

WETWELL VOLUME = $(2.5')^2 \times 3.14 \times 1.0 \text{ depth} = 19.625 \frac{\text{CU FT.}}{\text{V. FT.}}$

$= 19.625 \times 7.48 \frac{\text{GAL}}{\text{CU FT.}} = 147 \text{ GAL./V.FT.}$

RECOMMENDED VOLUME $= \frac{Qt}{4}$ where Q = DESIGN FLOW & t = cycle time

$V = \frac{28 \times 15 \text{ Min}}{4}$

$= 105$ gallons

∴ OPERATING VOLUME $\frac{105 \text{ GALLONS}}{147 \text{ GAL/V. FT.}} = 0.714$ v. ft.

SET FLOAT SWITCHES AT THE FOLLOWING ELEV:

INV. IN ELEV. ~ 978.5

HIGH WATER ALARM ELEV.	=	978.00
2ND. PUMP ON ELEV.	=	977.50
1ST. PUMP ON ELEV.	=	976.71
PUMP OFF ELEV.	=	976.00

BOTTOM OF WETWELL EL. 975.00

JOB NO. C03078	CCAD Civil Consulting and Design	LOCATION GREENVILLE, SC
JOB NAME WHITE HORSE COMMONS		DATE 6-4-04

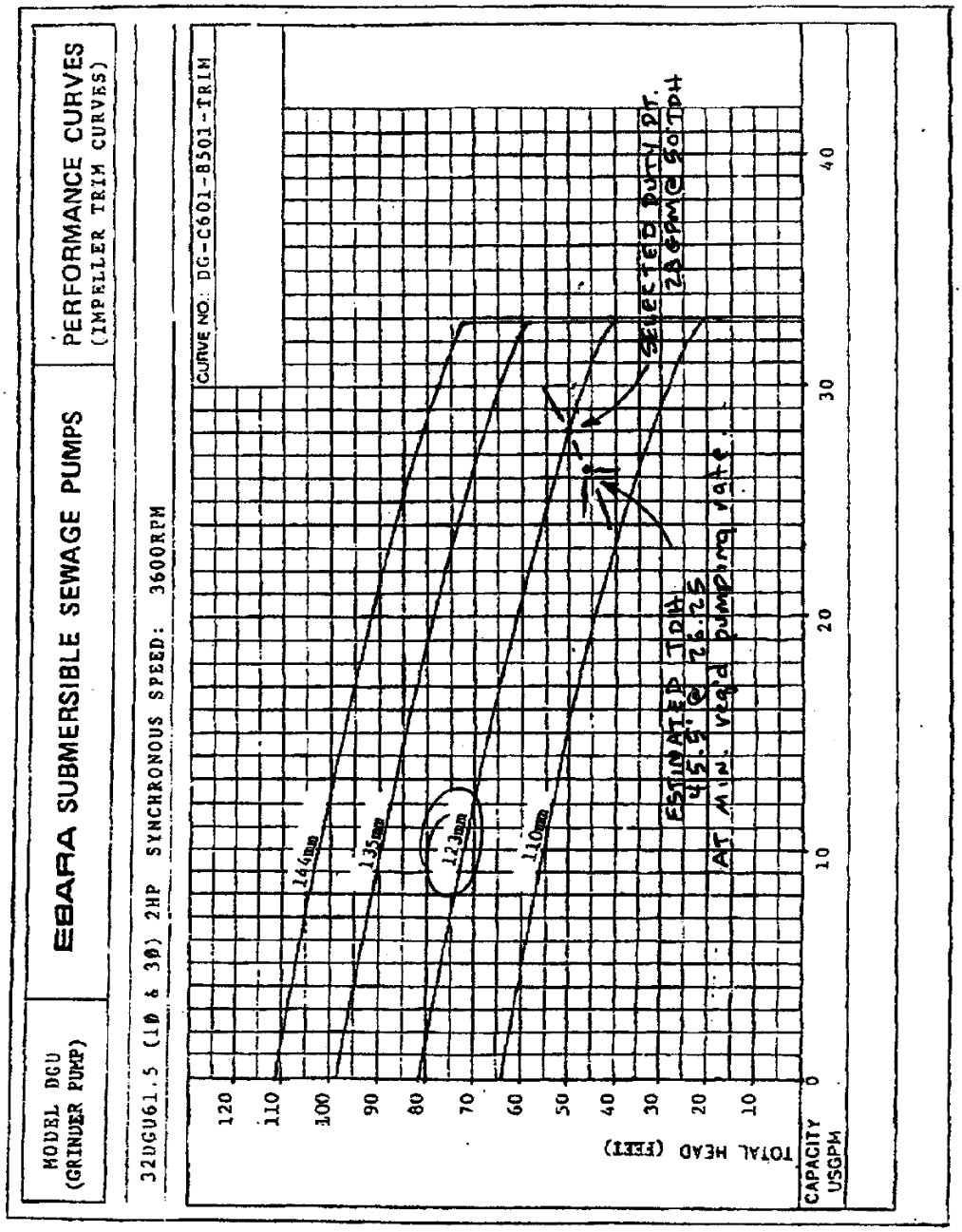
MAXIMUM WETWELL & M.H. STORAGE AVAILABLE ABOVE HIGH WATER ALARM ELEVATION

WETWELL: 987.0 - 978.0 = 9 V.FT. @ 147 GAL.
MH @ 0+46: 987.0 - 980.0 = 7 V. FT @ 94 GAL.
MH @ 1+04: 987.0 - 980.5 = 6.5 V.FT @ 94 GAL.
MH @ 3+73: 987.0 - 983.5 = 3.5 V. FT @ 94 GAL.
MH @ 5+08: 987.0 - 985.0 = 2.0 V. FT @ 94 GAL

APPROX. 500 L.F. 8" dia. pipe will contain
2.56 GAL./L.F. ~ 1280 GAL. WASTEWATER.
+ 1786 GAL (within 4'-0" MHs)
+ 1323 GAL. (within 5'-0" WW.)

EMERGENCY STORAGE = 4,389 GAL. within sewer system

AT AVERAGE DAILY FLOW = 10.5 GPM, this will provide 418 MINUTES (7 HOURS) RESPONSE TIME AFTER THE ALARM IS ACTIVATED. THIS FACTOR COMBINED WITH THE FACT THAT THE ENTIRE SERVICE AREA IS COMMERCIAL OFFICE USE THAT CAN BE EASILY NOTIFIED AND CONTROLLED, NO EMERGENCY STANDBY POWER IS PROVIDED.


MODEL DGU
(GRINDER PUMP)
EBARA SUBMERSIBLE SEWAGE PUMPS
PERFORMANCE CURVES
(IMPELLER TRIM CURVES)
32DGU61.5 (10 & 30) 2HP SYNCHRONOUS SPEED: 3600RPM
CURVE NO. DG-C601-8501-TRIM
TOTAL HEAD (FEET)
CAPACITY USGPM
144mm
135mm
123mm
110mm
SELECTED PUMP Dr.
28 GPM @ 60 TDH
ESTIMATED TDH
45.2' @ 26.2 GPM
AT MIN. required pumping rate.

EBARA SUBMERSIBLE GRINDER PUMPS **DGUII/DGFU**

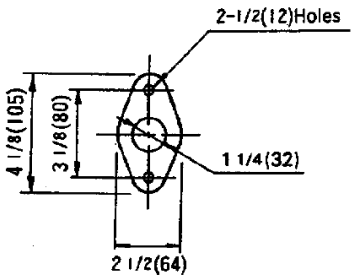
DIMENSIONS

2-150
March 1, 1997

MODEL DGUII WITH QUICK DISCHARGE CONNECTOR
SINGLE PHASE

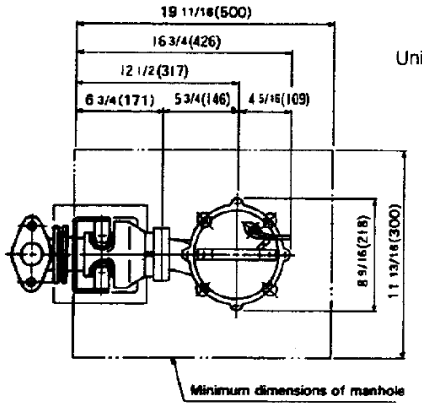
32DGUII, 2HP

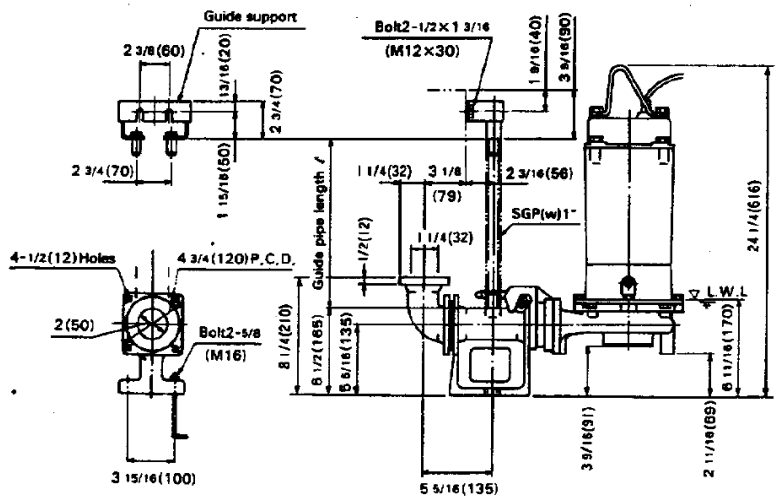
●FLANGE



LM50

Unit : inch (mm)





PHASE	MODEL	WEIGHT (Lb)		WEIGHT (kg)	
		Pump	Q.D.C.	Pump	Q.D.C.
SINGLE	32DGUII61.5S	93	25	42	11

EBARA SUBMERSIBLE GRINDER PUMPS

DGUII

SAMPLE SPECIFICATION

SPEC-007B

1. SCOPE OF SUPPLY

Furnish and install EBARA model _____ Submersible Pump(s). Each unit shall be rated at _____ GPM at _____ feet TDH.

The pump(s) shall be designed to pump raw water, unscreened sewage, storm water or other fibrous pumpage containing _____" solids without damage during operation. The pump(s) shall be designed so that the pump shaft horsepower (BHP) shall not exceed motor rated horsepower throughout the entire operating range of the pump performance curve.

2. CASING AND IMPELLER

All major parts of the pumping unit(s) including casing, impeller, motor frame and discharge elbow shall be manufactured from gray cast iron. All surfaces shall have a coating resistant to the corrosive effects of sewage.

All exposed bolts and nuts shall be stainless steel. The grinding impeller and grinding ring shall be high chrome cast iron having a minimum hardness of HRC 60. The grinding ring shall be reversible to extend the useful life of the grinding unit and shall be able to be accomplished without disturbing pump mechanical seals or grinding impeller. Grinding impeller shall be slip fit to the shaft and shall be key driven. No external adjustment of the grinding unit shall be required. Impeller shall be of the multi-vane vortex type and shall be equipped with back pump out vanes to prevent the entry of foreign material behind the impeller into the mechanical seal area. The impeller shall be slip fit to the shaft and shall be key driven.

3. SHAFT SEAL

The pump(s) shall be furnished with a dual mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber. The seal chamber shall be equipped with a built-in device to prevent over-filling and an anti-vortexing vane to insure proper lubrication of both seal faces. Lower mechanical seal faces shall be silicon carbide running against silicon carbide. The upper mechanical seal faces shall be carbon running against a stationary ceramic seat. Mechanical seal hardware shall be all stainless steel.

4. MOTOR

The pump motor(s) shall be _____ HP, _____ KW, _____ V, _____ HZ, _____ PH and shall be rated at _____ full load amps. Motor(s) shall have a 1.0 service factor and shall be rated for 20 starts per hour. Single phase motors shall be external start and run capacitor type. Motor(s) shall be air filled with class F insulated, moisture resistant copper windings. Motor shaft shall be series 400 stainless steel and shall be supported by two permanently lubricated, high temperature ball bearings, rated for a life expectancy of 50,000 hours at full load. Upper ball bearing shall be single row type. Lower ball bearing shall be dual row angular contact type designed to absorb all radial and axial thrust from the pump end. Sleeve bearings or bushings used to absorb radial thrust shall not be considered equal. All motors shall be supplied with built-in, dual response type, automatic resetting thermal overload protection and shall be rated for continuous duty.

5. MOTOR CABLE AND DETECTOR CABLE

Pump motor and detector cables shall be suitable for submersible pump applications and shall be vulcanized the entire length. Cable entry shall be composed of one piece, vulcanized, three-way mechanical sealing connector with limited tightening plate and strain relief chain (or gland) in order to provide the most dependable seal performance and to protect the cable entrance from unusual force.

EBARA SUBMERSIBLE PUMPS **MOTOR** DLU, DVU, DGUII, DGFU, DLFU, DVFU, DDLFU

ELECTRICAL DATA

2-332
November 10, 1997

PROJECT: MODEL: CHK'D: DATE:

MODEL DGUII

~~THREE PHASE~~ SINGLE PHASE (215/230)

2HP, 60HZ, 208/230 VOLT

Name-Plate Rating	Model			ZDG				
	Output		HP	2				
			kW	1.5				
	Phase			1				
	Poles			2				
	Volts		V	208/230				
	Amperes		A	15.7/12.8				
	Speed		min⁻¹	3270/3380				
	Insulation Class			F				
Capacity of Capacitor μF		Start		161~193				
		Run		25				
No Load Test		Amperes		1.7/1.9				
		Watts		335/401				
Resistance at 20°C OHMS		Main Coil		0.9				
		Aux. Coil		2.3				
100% Load	Current		Amp.	9.89/8.71				
	Efficiency		%	73.0/75.3				
	Power Factor		%	99.7/99.3				
	Speed		min⁻¹	3438/3477				
Locked Rotor Torque			%	341/428				
Start Current			Amp.	55/60				
Vibration			Micron	20				
Noise			Phon (50cm)	65				
Number Starts Per Hour				20				
Design Standard				NEMA (EQUIVALENT)				
Voltage Tolerance			%	± 10				
Frequency Tolerance			%	± 5				
(Ref. data Mfr's Symbols)				EB				

Exhibit M 6

Wastewater Construction Permit

Bureau of Water

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Permission is hereby granted to: WHITEHORSE ROAD LLC
14 MCKENNA COMMONS CT
GREENVILLE, SC 29615

for the construction of a sanitary sewer system in accordance with the construction plans, specifications, engineering report and the Construction Permit Application signed by James D. Mccutchen, Registered Professional Engineer, S.C. Registration Number: 18343.

Project Name: WHITEHORSE COMMONS PUMP STATION **County:** Greenville
Location: WHITEHORSE RD BETWEEN SALUDA DAM RD & SC HWY 253

Project Description: Construct a duplex 28-gpm grinder pump station with 700 LF of 2" PVC force main.

This project will connect to the WCRSA/MAULDIN RD (NEW) treatment facility, (NPDES Permit SC0041211) but will not contribute any new flow.

Special Conditions:

1. An executed (signed) Pump Station & Force Main Agreement must be in place between WHITE HORSE COMMONS LLC, WHITE HORSE COMMONS PROPERTY OWNERS ASSOCIATION LLC, CONDOR ENVIRONMENTAL O&M LLC and BEREA PSD before an Approval to Place in Operation can be granted.
2. The on-site sewer, pump station and force main can be installed, but no flow will accepted until the 18-inch parallel gravity sewer (Permit to Construct #29,877-WW) has been constructed, certified and placed into operation.

In accepting this permit, the owner agrees to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection.

This is a permit for construction only and does not constitute State Department of Health and Environmental Control approval, temporary or otherwise, to place the system in operation. An Approval to Place in Operation is required and can be obtained following the completion of construction by contacting the EQC Appalachia II District Office at (864) 241-1090. Additional permits may be required prior to construction (e.g., stormwater).

Permit Number: 30,502-WW
Date of Issue: November 23, 2004
Expiration Date: Construction must begin prior to November 24, 2006 and be completed prior to November 23, 2007, or this permit will expire.

Jeffrey P. deBessonet, P.E., Director
Water Facilities Permitting Division

JA

WW-1252-11

DHEC

CONSTRUCTION PERMIT APPLICATION
Water and/or Wastewater Facilities

BUREAU OF WATER

RECEIVED
AUG 2004
WATER RESOURCES
PERMITTING DIVISION

DRP SUBMITTAL: No ☑ Yes ☐

SELECT ONE ◆ ☐ Water Facilities ☑ Wastewater Facilities ☐ Water & Wastewater Facilities

I. **Project Name:** Whitehorse Commons P.S. **County:** Greenville

II. **Project Location** (street names, etc.): Whitehorse Road between Saluda Dam Road and SC Hwy. 253

III. **Project Description(s):** *Water System:* _____

Wastewater System: 28 GPM duplex submersible grinder pump station and approx. 700 LF 2" PVC forcemain

Project Type (A-Z): Water: ___ Wastewater: C *(See instructions for the appropriate project code)*

IV. ***Initial* Owner:** [Time of Application] Name/Organization: www.Whitehorse Road, LLC
Address: 14 McKenna Commons Ct. City: Greenville State: SC Zip: 29615 Phone #: (864)322-8282

V. ***Final* Owner:** [After Construction] Name/Organization: Condor Environmental O&M, LLC
Address: 508 Poinsett Hwy. City: Greenville State: SC Zip: 29615 Phone #: (864)242-8644

VI. **Entity Responsible for Final Operation & Maintenance of System:**
Water System: Name: _____ Address: _____
City: _____ State: ___ Zip: _____ Phone #: ( ) _____ Fax #: ( ) _____
Wastewater System: Name: Condor Environmental O&M, LLC Address: 508 Poinsett Hwy.
City: Greenville State: SC Zip: 29615 Phone #: (864)242-8644 Fax #: (864)242-1551

VII. **Engineering Firm:** Name: Civil Consulting and Design Address: 1A Creekview Ct.
City: Greenville State: SC Zip: 29615 Phone #: (864)250-9999 Fax #: (864)286-3058

VIII. **Is this project:** A) Part of a phased project? No☑ Yes☐. If Yes, Phase _____ of _____
B) A revision to a previously permitted project? No☑ Yes☐. If Yes, Permit # _____
Date Approved: _____ Project name (if different): _____
C) Submitted based on a Schedule of Compliance or Order issued by DHEC? No☑ Yes☐. Order # _____
D) Anticipating funding by the State Revolving Fund (SRF)? No☑ Yes☐.
E) Crossing a water body? (e.g., river, creek) No☑ Yes☐. If Yes, Name of water body _____

IX. **Are Standard Specifications approved by DHEC being used on this project?** No☐ Yes☑. If Yes:
Water: Date Approved: _____ Approved for whom: _____
Wastewater: Date Approved: 03-06-2003 Approved for whom: Civil Consulting and Design, LLC

X. **Wastewater Systems:** A) Type: Domestic ☑ Process *(Industrial)* ☐ Combined *(Domestic & Process)* ☐
B) Total average design flow of the project not to exceed 7,500 GPD
C) *Sewers or Pretreatment* 1. Name of facility (e.g., POTW) treating the wastewater: Mauldin Road WWTP
2. NPDES/ND Number of facility in Item #1: SC0041211
Treatment Systems 3. Date Preliminary Engineering Report (PER) approved: _____
4. NPDES/ND application submitted? No☐ Yes☐. If Yes, Date _____
Disposal Sites 5. Effluent Disposal Site (Description): _____
6. Sludge Disposal Site (Description): _____

XI. **Water Systems:** Project located within city limits? No☐ Yes☐.
Public water system providing water (Name & System ID No.): _____ No.: _____
New water system (including master meter)? No☐ Yes☐. If Yes, System name: _____

XII. **Type of Submittal:** Complete Section A (Standard) *or* Section B (Delegated Review Program - DRP).

A) Standard Submittal *must* include the following, where applicable:

- ☐ 1. A transmittal letter outlining the submittal package.
- ☐ 2. The original construction permit application, properly completed, with three (3) copies.
- ☐ 3. Three (3) sets of signed and sealed plans and specifications. Specifications may be omitted if approved standard specifications are on file with DHEC.
- ☐ 4. One (1) additional overall plan sheet showing the proposed and existing (only in the area of proposed construction) water and wastewater lines (highlighted for identification) and their sizes.
- ☐ 5. Three (3) sets of the appropriate design calculations. WASTEWATER: Design flow (based on R.61-67, Appendix A), pump station calc's. and pump curve. WATER: Recent flow test from a location near the tie-on site, design calc's. indicating pressure maintained in the distribution system during max. instantaneous demand, fire flow and flushing velocities achieved. Number/types of service connections, well record form, pumping test results, etc.
- ☐ 6. Three (3) copies of a detailed 8½" x 11" location map, seperate from the plans.
- ☐ 7. Three (3) copies of construction easements unless the project owner has the right of eminent domain.
- ☐ 8. A letter(s) from the entity supplying water and/or providing wastewater treatment stating their willingness and ability to serve the project, including pretreatment permits, if applicable. The letter should include the specific flow and, when applicable, the specific number of lots being served.
- ☐ 9. A letter(s) from the entity agreeing to be responsible for the O&M of the water and/or wastewater system.
- ☐ 10. WASTEWATER SYSTEMS: Application fee enclosed $_____. (Refer to R.61-30, Fee Schedule).
- ☐ 11. WATER SYSTEMS: a) A letter from the local government which has potable water planning authority over the area, if applicable, in which the project is located, stating project consistency with water supply service plan for area.
  b) For wells, four (4) copies of a wellhead protection area inventory.
  c) For new wells, a viability demonstration is required in accordance with Regulation 61-58.1.B.(4).

Note: Other approvals may include 208 and OCRM certification, and navigable waterway permitting.

B) DRP submittal (treatment plants are not covered) *must* include the following, where applicable:

- ☐ 1. A transmittal letter, signed by the professional engineer representing the DRP entity, noting this is a DRP submittal. The letter should state that the project has been reviewed and complies with R.61-58 and/or R.61-67.
- ☐ 2. The original construction permit application, properly completed, with two (2) copies.
- ☐ 3. Two (2) sets of the signed and sealed plans.
- ☐ 4. One (1) additional plan sheet with water and wastewater lines highlighted, as required under Sec. XII.A.4. above.
- ☐ 5. Two (2) sets of the appropriate design calculations. WASTEWATER: Same information as required under Section XII.A.5. above. WATER: Same information as required under Section XII.A.5. above.
- ☐ 6. Two (2) copies of a detailed 8½" x 11" location map, separate from the plans.
- ☐ 7. Two (2) copies of construction easements, unless the project owner has the right of eminent domain.
- ☐ 8. DHEC's Ocean and Coastal Resource Management certification (for projects in applicable counties).
- ☐ 9. DHEC's Water Quality permit or conditions for placement in navigable waters, and other Agency approvals.
- ☐ 10. WASTEWATER SYSTEMS: a) A letter of acceptance from the entity providing the treatment of the wastewater that includes the specific flow and, when applicable, the specific number of lots being accepted.
  b) A letter from the organization agreeing to be responsible for the O&M of the sewer system.
  c) The 208 Plan certification from the appropriate Council of Governments (designated 208 areas), or from DHEC on the non-designated 208 areas.
  d) Application Fee of $75 for a collection/transmission system submitted as a DRP project.
- ☐ 11. WATER SYSTEMS: A letter from the local government which has potable water planning authority over the area, if applicable, in which the project is located, stating project consistency with water supply service plan for area.

Note: The DRP entity should ensure that a copy of the final approved plans are returned to the design engineer.

XIII. Construction plans, material and construction specifications, the engineering report including supporting design data and calculations are herewith submitted and made a part of this application. I have placed my signature and seal on the engineering documents submitted, signifying that I accept responsibility for the design of this system, and that I have submitted a complete administrative package.

Engineer's Name (Printed): J. D. Mccutcheon Signature: _____

S.C. Registration Number: 18343 Registered Professional Engineer

XIV. Prior to final approval, I will submit a statement certifying that construction is complete and in accordance with the approved plans and specifications, to the best of my knowledge, information and belief. This certification will be based upon periodic observations of construction and a final inspection for design compliance by me or a representative of this office who is under my supervision.

Engineer's Name (Printed): J. D. Mccutcheon Signature: _____

S.C. Registration Number: 18343 Registered Professional Engineer

XV. I hereby make application for a permit to construct the project as described above. I have read this application and agree to the requirements and conditions and agree to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection. NICK72 By Ass LLC.

Owner's Name (Printed): Nick Franchina Signature: _____

Owner's Title: Manager / member Date: 8-9-04

Exhibit M 7

CCAD
Civil Consulting and Design

July 20, 2005

Mr. Guy Tumblin
S.C. D.H.E.C.
301 University Ridge, Suite 5800
Greenville, SC 29601

RE: CONSTRUCTION PERMIT #30,502-WW AND #30,503-WW
WHITEHORSE ROAD LLC
GREENVILLE COUNTY, SOUTH CAROLINA

Dear Mr. Tumblin:

Civil Consulting & Design, LLC has performed an "As-Built" inspection to verify that the gravity sewer system, pump station, and force main were constructed in general accordance with Construction Permit #30,502-WW and #30,503-WW. An "As-Built" Drawing of the new sanitary sewer lines and pump station is attached.

The Berea Public Service District has verified testing of the lines and provided a letter of acceptance of the gravity sewer into their system. Condor Environmental had also provided the same for the pump station and force main. Please provide the Permit of Operate at your earliest convenience. If you need any further information please do not hesitate to call us at (864) 250-9999.

Sincerely,
Civil Consulting & Design, LLC

James D. McCutchen, Jr.
President

RECEIVED
JUL 25 2005

198 Roper Mountain Rd. Ext., Ste. B • Greenville, SC 29615
864.250.9999 • Fax 864.286.3056 • www.ccadengineering.com

Exhibit M 8

WESTERN CAROLINA REGIONAL SEWER AUTHORITY
PROVIDING A CLEANER ENVIRONMENT

Administrative Office
561 Mauldin Road • Greenville, SC 29607
864/299-4000 • Fax 864/277-5852

J 13a
This needs to be a special condition
Jeff

August 4, 2004

Mr. Jamie McCutchen, P.E.
Civil Consulting and Design
198 Roper Mtn. Road Ext., Suite B
Greenville, South Carolina 29615

RE: Whitehorse Commons
Whitehorse Road in Greenville County, South Carolina

Dear Mr. McCutchen:

Western Carolina Regional Sewer Authority (WCRSA) has sufficient sewer treatment capacity for the 15 office buildings for a total flow of 7,500 gpd conditional upon the following:

- The on-site sewer, pump station and force main can be installed, but no flow will be accepted until the new 18-inch parallel gravity sewer (Permit to Construct Number 29,887-WW) has been constructed, certified and placed into operation.

Once the above condition has been met, this requested flow will be treated at the Mauldin Road Wastewater Treatment Plant, NPDES Permit No. SC0041211.

All sewer connections directly or indirectly served by WCRSA are subject to a "New Account Fee." No tie-ins will be allowed until a connection permit is issued by WCRSA. Please notify WCRSA if there are any changes in total daily flows.

Sincerely,

J. Brian Bishop

J. Brian Bishop, P.E.
Engineering Supervisor

cc: SCDHEC – Greenville
SCDHEC – Columbia
Berea Public Service District

I:\linda\acceptance letters\whitehorse commons.doc

Exhibit M 9

BEREA PUBLIC SERVICE DISTRICT

7401 WHITE HORSE ROAD
GREENVILLE SOUTH CAROLINA 29611

July 20, 2005

Mr. Ryan S. Wright, P.E.
Civil Consulting and Design
198 Roper Mtn. Rd., Suite B
Greenville, SC 29615

RE: White Horse Commons

Berea Public Service District will at this time accept into our system White Horse Commons. The District agrees to own, operate, and maintain these sewer lines. A final inspection of the manholes will be made after final paving and any that have been offset during paving will be the responsibility of the contractor or the developer and must be corrected when notified.

Sincerely,

George Anson

George E. Anson
Wastewater Maint. Supervisor

Post-it® Fax Note	7671	Date	# of pages ▶
To		From	
Co./Dept.		Co.	
Phone #		Phone #	
Fax #		Fax #	

Exhibit N 1

PUMP STATION AND FORCE MAIN AGREEMENT

THIS PUMP STATION AND FORCE MAIN AGREEMENT is made and entered into on this ____ day of _____, 1999, by and among THORNBLADE CROSSING HOMEOWNERS ASSOCIATION, INC., a South Carolina nonprofit membership corporation (the "Association"); CONDOR ENVIRONMENTAL, INC., a South Carolina corporation ("Condor"); METROPOLITAN SEWER SUBDISTRICT, a special purpose district created under the laws of South Carolina ("Metropolitan");and POINSETT DEVELOPMENT, L.C.C., a South Carolina limited liability company ("Poinsett").

WITNESSETH:

WHEREAS, Poinsett is currently developing a residential subdivision ("Thornblade Crossing Subdivision") in Greenville County, South Carolina, on the property which is described on Exhibit A, hereto attached and made a part hereof; and

WHEREAS, the Association is the governing association for the Thornblade Crossing Subdivision, and has been organized pursuant to that certain Declaration of Covenants and Restrictions for Thornblade Crossing, dated JANUARY 1, 1999, recorded in the Office of the Register of Deeds Greenville County, in Deed Book 1813, Page 322 ; and

WHEREAS, the development plan for the Thornblade Crossing Subdivision provides for a total of 116 town houses of which 56 of said town houses will be served by the Pump Station and Force Main as hereinafter defined; and

WHEREAS, gravity sanitary sewer service will be provided to the Thornblade Crossing Subdivision by Metropolitan; and

WHEREAS, due to the topography of the land on which Thornblade Crossing Subdivision is being developed, a Pump Station and Force Main (hereinafter referred to as the "Pump Station and Force Main") will be required to be installed within Thornblade Crossing Subdivision, and under its current policies Metropolitan is unwilling to assume the ownership or maintenance responsibility for the Pump Station and Force Main; and

WHEREAS, Condor has agreed to assume the ownership and maintenance responsibility for the Pump Station and Force Main in accordance with the terms and provisions of this Agreement, and Metropolitan has agreed to initiate sanitary sewer service to Thornblade Crossing Subdivision in the event that the Association and Condor enter into this Agreement;

NOW, THEREFORE, for and in consideration of the foregoing premises, and of the mutual covenants of the parties herein set forth, the parties hereto hereby agree as follows:

1. COMPLETION AND CONVEYANCE OF PUMP STATION AND FORCE MAIN. The Association has heretofore entered into that certain contract with R & R Utility, Inc. (the "Contractor"), pursuant to which the Contractor has agreed to complete the construction of the Pump Station and Force Main in accordance with the plans and specifications for the Pump Station and Force Main prepared by Arbor Engineering, Inc. (the "Engineer") and to cause the Pump Station and Force Main to be approved to operate by the Department of Health and Environmental Control of the State of South Carolina. The Association agrees that at such time as the actions described in the foregoing sentence shall have been completed, The Association shall transfer and convey the Pump Station and Force Main to Condor. At the time of said transfer and conveyance, The Association shall also assign to Condor all warranties which shall have been made to The Association, or which shall have been deemed to have been made to The Association, by the Contractor and the Engineer in regard to the Pump Station and Force Main and the plans and specifications for the Pump Station and Force Main. Condor agrees that, prior to the transfer and conveyance of the Pump Station and Force Main to it, it will conduct such investigations of the Pump Station and Force Main as Condor shall deem necessary to satisfy itself as to the condition of the Pump Station and Force Main and will rely solely upon such investigations and not upon any information provided by or on behalf of The Association with respect thereto. Condor shall assume the risk that adverse matters, including, but not limited to, construction defects and adverse physical and environmental conditions, may not have been revealed by Condor's investigations, and Condor, upon its receipt of the deed and bill of sale executed by The Association to Condor for the Pump Station and Force Main shall be deemed to have waived, relinquished and released The Association from and against any and all claims, demands, causes of action, losses, damages, liabilities, costs and expenses of any kind or character, known or unknown, which Condor may have asserted or alleged against The Association at any time by reason of or arising out of any latent or patent construction defect or physical condition, violation of any applicable law (including, without limitation, any environmental law), and any and all other acts, omissions, events, circumstances or matters regarding the Pump Station and Force Main.

2. OPERATION OF PUMP STATION AND FORCE MAIN. Condor agrees to accept the transfer and conveyance to it by The Association of the Pump Station and Force Main in accordance with the provisions of Paragraph 1 hereof and thereafter to operate, repair, maintain and replace the same in accordance with the terms and provisions of this Agreement.

Condor shall operate and maintain the Pump Station and Force Main so that all houses within the Thornblade Crossing Subdivision shall receive continuous sanitary sewer service without interruption. The repair, maintenance and replacement responsibilities of Condor under this Agreement shall include the replacement of all parts of the Pump Station and Force Main which shall become worn out or obsolete and the making of all capital repairs and replacements as shall be necessary in order for Condor to carry out its obligations under this Agreement without interruption.

Condor shall operate and maintain the Pump Station and Force Main so that the

same will at all times comply with and fulfill at all governmental laws, rules and regulations that shall be applicable to the operation and maintenance of the Pump Station and Force Main. Without limiting the generality of the foregoing, Condor shall operate and maintain the Pump Station and Force Main in accordance with all rules and regulations which shall be promulgated at any time, and from time to time, by Metropolitan for privately owned and maintained sanitary sewer Pump Station and Force Mains which are part of the sewage treatment system operated by Metropolitan. In addition, Condor shall comply with all policies and requirements of the South Carolina Public Service Commission which shall be applicable to the Pump Station and Force Main and Condor's operation thereof. Condor shall be solely responsible for the payment of all costs and expenses which it shall incur in connection with the carrying out of its duties and responsibilities under this Agreement.

3. PAYMENT BY THE ASSOCIATION. The Association hereby agrees that in consideration for the performance by Condor of its duties and obligations under this Agreement, the Association shall pay to Condor the amount of One Thousand Two Hundred fifty-five Dollars and six cents ($1,259.06) (the "Monthly Pump Station Fee") per month . (The amount which shall be due to Condor from the Association each month, as herein provided, is hereinafter referred to as the "Monthly Payment").

Upon execution of this Agreement, the Association shall deliver to Condor an irrevocable letter of credit from a bank located in Greenville or Spartanburg County, South Carolina in the amount of ten thousand dollars ($10,000.00) to guarantee the payment by the Association of the Monthly Pump Station and Force Main Fee to Condor in accordance with the terms for hereinafter. The letter of credit is to have a term of twenty four (24) months. The Association agrees to renew the letter of credit or to maintain a ten thousand dollars ($10,000.00) cash escrow to guarantee the payment of the "Monthly Pump Station Fee".

The Association shall pay the Monthly Pump Station Fee to Condor on or before the tenth day of each calendar month by means of a check made payable to Condor and mailed or otherwise delivered to the address herein below provided. In the event that the Association shall at any time fail to pay to Condor the Monthly Pump Station Fee within thirty (30) days of the due date, Condor shall have the right to draw the Monthly Pump Station Fee plus ten percent (10%) of the Monthly Pump Station Fee as a delinquency charge from the Association's Letter of Credit. Condor shall at all times be responsible for the continued performance of its duties and obligations under this Agreement.

Upon no less than ninety (90) days prior notice to the Association, Condor shall have the right to increase the amount of the Monthly Pump Station Fee at any time, in order to compensate Condor for any reasonable increase in the cost and expense to Condor of performing its responsibilities under this Agreement, provided that such increase shall be approved in advance by the South Carolina Public Service Commission and further provided that the increase in the Monthly Pump Station Fee shall not be increased by more than three (3%) percent in any twelve month period. Notwithstanding the foregoing, Condor shall not increase the amount of the

Monthly Pump Station Fee because of any fine or penalty assessed by any regulatory agency to Condor for any act or omission by Condor or for repairs or replacements to the Premises, including the Pump Station and Force Main, that are the result of the negligent or intentional acts or omissions of Condor.

4. APPROVAL BY METROPOLITAN. Metropolitan hereby consents to the terms of this Agreement and agrees that at such time as the Pump Station and Force Main shall be transferred and conveyed by The Association to Condor, as provided for in Paragraph 1 of this Agreement, Metropolitan will accept the discharge from the Pump Station owned and operated by Condor . Metropolitan further agrees that it shall assist The Association and Condor in obtaining all governmental approvals which are required to be obtained from governmental authorities.

5. RESERVE ACCOUNT BY POINSETT OR THE ASSOCIATION. At the time of the transfer and conveyance of the Pump Station and Force Main by The Association to Condor, The Association and/or Poinsett shall deposit with Metropolitan, the sum of thirty thousand dollars ($30,000.00) as a reserve account for the purposes and uses herein provided. The parties hereto agree that the establishment of such reserve account is a one-time obligation which may be drawn on by Metropolitan for replacement of the Pump Station and Force Main, or any portion thereof, if damaged by accident, vandalism or other disaster neither caused by Condor nor covered by casualty insurance which shall be carried and maintained by Condor and which renders the Pump Station and Force Main, or and portions thereof, irreparable. Any interest earned on the reserve account shall be the property of Metropolitan to offset any cost and expenses of any periodic inspections of the operation and the maintenance of the Pump Station and Force Main by Condor or of any responsibilities of Metropolitan as a result of the installation and operation of the Pump Station and Force Main or of this Agreement. Further, all or any portion of said reserve account may be used to offset the costs and expenses of installation and construction of a gravity sewer if such gravity sewer will replace the Pump Station and Force Main. If the Pump Station and Force Main is replaced by a gravity sewer, or the ownership and operation of the Pump Station and Force Main is transferred to and assumed by a public entity having jurisdiction and authority therefor, the reserve account shall terminate and all funds remaining therein including any interest shall become the property of Metropolitan.

6. NOTICES. Any notices which may be permitted or required under the terms and provisions of this Agreement shall be in writing and shall be deemed to have been duly given, except as otherwise provided in this Agreement, as of the date and time the same are received by the parties to whom the notices are sent. Such notices shall be deemed received upon hand delivery or by Federal Express or equivalent courier and evidenced by a notation on the records of that courier that such notices were delivered to the parties at the following addresses or at such other address as a party shall notify the other parties in writing:

(a) The Thornblade Crossing Homeowners Association, Inc.
Attention: Ted D. Smith

221 Pelham Road
Greenville, South Carolina 29615
Telephone No.: (864) _____
Telecopy No.: (864) _____

(b) Condor Environmental, Inc.
602 Lenhardt Road
Greenville, South Carolina 29611
Telephone No.: (864) _____
Telecopy No.: (864) _____

(c) Metropolitan Sewer Subdistrict
Attention: Mike Dickson
103 Lydia Street
Greenville, South Carolina 29605
Telephone No.: (864) 277-4442
Telecopy No.: (864) 277-4272

(d) Poinsett Development, L.C.C.
221 Pelham Road
Greenville, South Carolina 29615
Telephone No.: (864) 235-3211
Telecopy No.: (864) 235-2441

7. Term. The term of this Agreement shall commence on the date on which this Agreement shall be executed by all parties hereto and shall continue in full force and effect until such time, if any, as Condor shall have transferred and conveyed the Pump Station and Force Main to a governmental subdivision of the State of South Carolina which shall have all power and authority necessary to operate and maintain the Pump Station and Force Main and shall have agreed with the Association to do so.

In addition to the above, this Agreement may terminate in the following ways:

(a) This Agreement will terminate if a public entity agrees to assume the operation of the Premises;

(b) If the Pump Station and Force Main is replaced by a gravity sewer line, the Agreement shall terminate effective upon the date that the gravity sewer line is placed into operation;

(c) Condor may terminate the Agreement upon ninety (90) days prior written notice to the Association, provided that prior to termination Condor has identified for the Association and the Association has approved a successor entity that is properly

qualified and licensed to enter into an Agreement substantially similar to this Agreement or into an Agreement reasonable satisfactory to the Association to operate the Pump Station and Force Main. Condor shall at all times be responsible for the continued performance of its duties and obligations under this Agreement until the successor entity has assumed the obligations under this Agreement.

(d) The Association may terminate the Agreement upon thirty (30) days prior written notice to Condor, if (i) sewage related odors emanate from the Pump Station and Force Main such that odors can be detected and a complaint is received by the Association, by any Thornblade Crossing Subdivision resident for a cumulative period of fourteen (14) days or more during any rolling twelve (12) month period; (ii) any performance standard included within this Agreement is not met for a cumulative period of fourteen (14) days or more during any rolling twelve (12) month period; (iii) a sewage back up in any residence, caused by the Pump Station and Force Main, occurs two (2) or more times during any rolling twelve (12) month period; or (iv) a sewage overflow out of the Pump Station and Force Main, occurs two (2) or more times during any rolling twelve (12) month period; or for the convenience of the Association. In the event of any default of Condor of any of these conditions, Condor agrees to promptly deed the Pump Station and Force Main Premises back to the Association without consideration.

8. METROPOLITAN APPROVAL. Notwithstanding the foregoing, however, any operation of the Pump Station by any person, party, or entity other than Condor, as herein provided, shall be subject to the approval by Metropolitan. Upon the acceptance of said transfer and conveyance by such a governmental authority, Condor shall be automatically released from all further duties or obligations under the terms of this Agreement.

IN WITNESS WHEREOF, the parties hereto each of who being duly authorized have set their hands and seals on the day and year first above written.

THE THORNBLADE CROSSING HOMEOWNERS ASSOCIATION, INC.

By: _____

DATED: 12-16-99

CONDOR ENVIRONMENTAL, INC.

By: _____

DATED: 2-6-00

METROPOLITAN SEWER SUBDISTRICT

By: _____

DATED: 12-17-99

POINSETT DEVELOPMENT, L.C.C.

By: _____

DATED: 12/16/99

Exhibit N 2

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Appalachia II
Environmental Quality Control
301 University Ridge, Suite 5800
Greenville, SC 29601-3677
864-241-1090 Fax: 864-241-1092

Serving
Greenville and Pickens Counties

Wastewater System Construction
APPROVAL TO PLACE INTO OPERATION

Date: December 17, 1999

Issued to: Poinsett Development
221 Pelham Road
Greenville, S.C. 29615

for the operation of the permitted system referenced below:

Permit Number: 24,489-WW
Project Name: Thornblade Crossing Phase 2
County: Greenville

Project Description: Approximately 114 LF of 8 inch DIP gravity sewer line, 1181 LF of 8 inch PVC gravity sewer, 10 manholes, a pump station, 714 LF of force main to serve this portion of Thornblade Crossing.

Design Flow Rate: 48000 gpd(flow for entire subdivision) Refer to Permit #23,402-WW
WWTP: WCRSA/Pelham Road WWTP (SC0033804)

Special Conditions:
1. This approval is contingent upon proper deeding of the line to Metropolitan Sewer Sub-District.
2. The pump station and force main will be owned and operated by Condor Environmental.

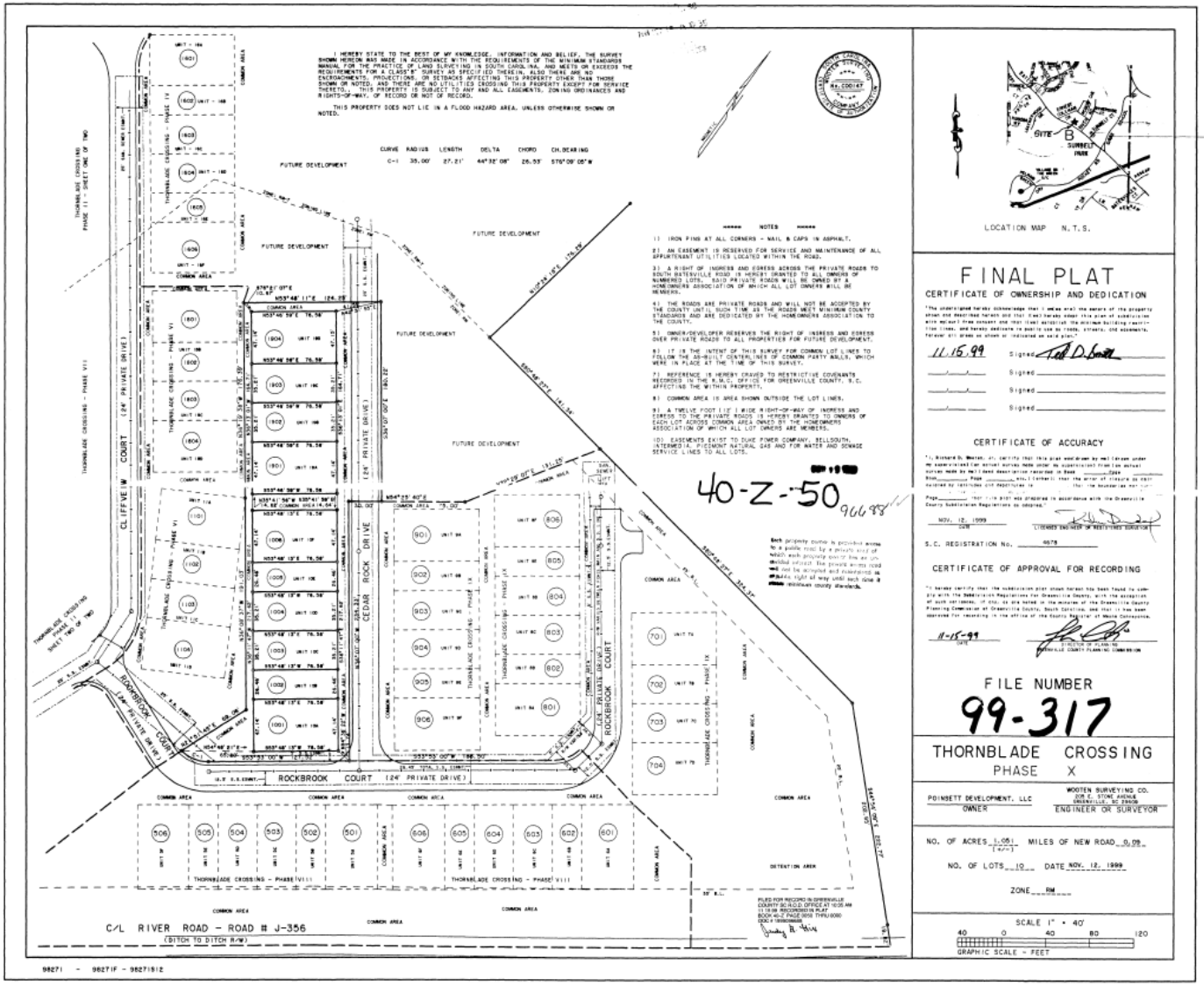
This approval is based on the Engineer's letter of certification (November 30, 1999) signed by Thomas Keith, P.E., S.C. Registration No. 7697, acceptance letter for the sewer lines(December 17, 1999) from Metropolitan Sewer Sub-District, and acceptance letter for the pump station and force main (December 07, 1999) from Condor Environmental. (I.)

Florence B Hall

Florence B. Hall
District Engineer Associate
Appalachia II EQC District

cc: Thomas Keith, P.E., Arbor Engineering
Wayne Stokes, BOW
Mike Montebello, BOW
Metropolitan Sewer Sub-District ✓
Lauren Hildebrand, P.E.,WCRSA
Sam Weaver, Condor Environmental
Greenville County Codes
Mike Parrott, Health Department

Exhibit N 3



98271 - 98271F - 98271S1Z

SANITARY SEWER FLOW CALCULATIONS

Date: July 24, 1998

Regarding: Thornblade Crossing
Batesville Road and River Road
Greenville County, South Carolina
Tax Map No. 534.1-1-9.1
Arbor Job No. 97137-4

Average Daily Flow

The proposed sanitary sewer lines will serve a townhouse subdivision with 76-3 bedroom units and 42-2 bedroom units. The line will also provide service for the recreational facility with 1 clubhouse and swimming pool. The flow for the site will be divided, with a portion having to be routed to a lift station and pumped to a proposed gravity manhole on site. The chart below shows the Average Daily Flow in Gallons Per Day (GPD) using a Unit Contributory Loading of 100 GPD per person for the townhouse units and 50 GPD per person for the clubhouse/pool areas.

FLOW ROUTED TO SANITARY SEWER LIFT STATION

No.	Unit Type	Persons	Unit Loading	ADF
36	3-Bedroom (4 persons)	144	100 GPD/Person	14,400 GPD
20	2-Bedroom (3 persons)	60	100 GPD/Person	6,000 GPD
Totals to Lift Station				20,400 GPD

GRAVITY FLOWING SEWER

No.	Unit Type	Persons	Unit Loading	ADF
40	3-Bedroom (4 persons)	160	100 GPD/Person	16,000 GPD
22	2-Bedroom (3 persons)	66	100 GPD/Person	6,600 GPD
1	Clubhouse/pool	100	50 GPD/Person	5,000 GPD
Total Proposed Gravity Flow				27,600 GPD
Total Proposed Average Flow				**48,000 GPD**

Peak Flow

The peak flow for checking the flow velocities in the new 8" line will be determined using a peak factor of $(18+\text{Populations}^{1/2})/(4+\text{Population}^{1/2})$.

ADF (GPD)	Peak Factor	Peak GPD	Peak MGD
48,000	4.0	192,000	0.192

Velocities

The chart below shows the calculations for determining the flow velocities in the lowest new line prior to connection with the existing line.

Size in.	Slope %	Qfull MGD	Qactual MGD	Qa/Qf	Va/Vf	Vfull ft/sec	Vactual ft/sec
8	0.5	0.552	0.192	0.348	0.900	2.45	2.205

THORNBLADE CROSSING - SS CALCULATIONS

Arbor Job No. 97137-4
July 24, 1998

Wastewater Flow and Characteristics

Description of Project - The Thornblade Crossings Townhouse Subdivision will consist of a total of 118 units with 76 units being 3 bedrooms and the remaining 42 units being 2 bedrooms. Of this 118 units, a gravity sanitary sewer system could only provide service to 62 units (40-3 bedrooms and 22-2 bedrooms) and the swimming pool/clubhouse. The remaining 56 units (36-3 bedrooms and 20-2 bedrooms) will require a lift station on site to pump the remaining flow to an on site gravity sewer manhole. The sanitary sewer lift station is required due to the topography of the site and the location of the off site sewer that we plan to tie into for service. In order to gravity flow the entire site we would be required to make a 30 ft +/- bore beneath Batesville Road.

Flow - The total amount of domestic wastewater flow from this project were determined using the DHEC contributory loading guidelines and the future population based on size and number of townhouse units. The peaking factor for the anticipated contributory loading was based upon the Ten State Standards. In addition to the contributory loading, peak infiltration/inflow for the townhouse subdivision was included based upon the amount of area that the lift station would be serving.

Proposed Population	204 persons @ 100 gpd/person =	20,400 gpd
Peak Factor	(Ref. Ten State Standard)	3.0
Total Peak Domestic Wastewater Flow		61,200 gpd
Peak Infiltration/Inflow		15,000 gpd
Total Peak Wastewater Flow		76,200 gpd
		or
		53.0 gpm
		Designed for 80 gpm

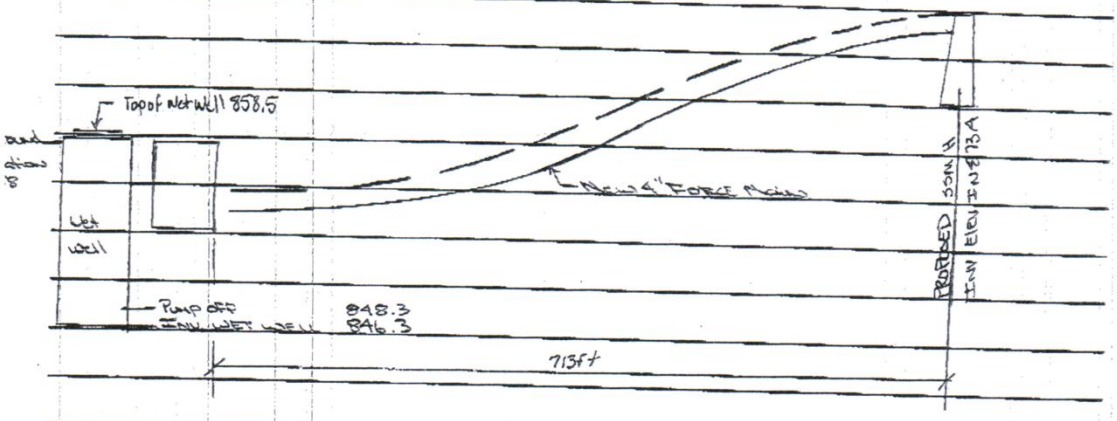
Characteristics - All wastewater flow contributed by the townhouse complex will be domestic in nature. No industrial discharges currently exist or are planned. The wastewater should have no adverse affects on the Treatment Plant.

ARBOR ENGINEERING, INC.

Job Name Thornblade Crossing - 35 Lift Station Calculations Job No. 97137

Date: 5/25/99 By: JCA

I Project Schematic:



II Waste Water Flow Running Rate:

(A) Proposed Flow To Lift Station (based on DHEC Contributary Loading)

(1) 36-3 Bedroom Units (4 Person/Unit) ⇒ 36 Units x 4 Person/Unit x 100 GPD/Person = 14,400 GPD

(2) 20-2 Bedroom Units (3 Person/Unit) ⇒ 20 Unit x 3 Person/Unit x 100 GPD/Person = 6000 GPD

Total Avg Daily Flow = 20,400 GPD

(B) Peak Factor = 3.0

(C) Total Peak Domestic Wastewater Flow: 61,200 GPD = 61,200 GPD

(D) Peak Infiltration / Inflow (based on 10 Acres @ 1500 GPD/Acre) = 15,000 GPD

(E) Total Design Flow = 76,200 GPD

= 53 GPM

Design @ 180 GPM

ARBOR ENGINEERING, INC.

Job Name: Thornblade Crossing - SS Lift Station Job No. 97137

Date: 5/25/99 By: JCA

III Determine Equivalent Length of Fitting - Approximately 80ft

IV Determine Equivalent Length of Pipe:

130ft + 713ft ≈ **850Ft**

V STATIC HEAD: 873.4 - 848.3 = 25.1Ft **USE 25Ft**

VI System Head Curve Data

Q	STATIC HEAD	H_L (C=130) (DSP)	TDH (C=130)*
50gpm	25ft	1.83ft	26.83Ft
80gpm	25ft	4.36ft	29.36Ft ← Design
100gpm	25ft	6.58ft	31.58Ft
125gpm	25ft	9.94ft	34.94Ft
150gpm	25ft	13.93ft	38.93Ft

* System Head Curve Calculation

Area (4" DSP) = $\frac{\pi D^2}{4} = \frac{\pi (4/12)^2}{4} = 0.087 ft^2$ R = D/4 = 4/12 = 0.083 Ft L = 850ft

H_L (C=130) (DSP) For 50 GPM

$$H_L = \frac{V^{1.85} L}{[1.318C]^{1.85}[R]^{1.17}} =$$

$V = Q/A \geq Q = 50 \text{ gpm} \times 2.228 \times 10^{-3} = 0.111 \text{ Ft}^3/\text{sec}$

$V = 0.111 \text{ Ft}^3/\text{sec} / 0.087 \text{ Ft}^2 = 1.28 \text{ Ft/sec}$

$$H_L = \frac{[1.28]^{1.85}[850]}{[(1.318)(130)]^{1.85}[0.083]^{1.17}} = 1.83 Ft$$

ARBOR ENGINEERING, INC.

Job Name Thornblade Crossing Job No. 97137

Date: 5/25/99 By: JCA

VE System Head Curve Calculations Cont

At ⇒ 80 gpm (C=130) (DSP) For 80 GPM

$$H_L = \frac{[2.05]^{1.85}[850]}{[(1.318)(130)]^{1.85}[0.083]^{1.17}} = 4.36 ft$$

$Q = 80 gal/min \times 2.228 \times 10^{-3} = 0.178 ft^3/sec$

$V = 0.178 ft^3/sec / 0.087 ft^2 = 2.15 ft/sec$

At ⇒ 100 gpm (C=130) (DSP) For 100 GPM

$$H_L = \frac{[2.56]^{1.85}[850]}{[(1.318)(130)]^{1.85}[0.083]^{1.17}} = 6.58 ft$$

$Q = 100 gal/min \times 2.228 \times 10^{-3} = 0.223 ft^3/sec$

$V = Q/A = 0.223/0.087 = 2.56 ft/sec$

At ⇒ 125 gpm (C=130) (DSP) For 125 GPM

$$H_L = \frac{[3.20]^{1.85}[850]}{[(1.318)(130)]^{1.85}[0.083]^{1.17}} = 9.94 ft$$

$Q = 125 gal/min \times 2.228 \times 10^{-3} = 0.2785 ft^3/sec$

$V = Q/A = 0.2785/0.087 = 3.20 ft/sec$

At ⇒ 150 gpm (C=130) (DSP) For 150 GPM

$$H_L = \frac{[3.84]^{1.85}[850]}{[(1.318)(130)]^{1.85}[0.083]^{1.17}} = 13.93 ft$$

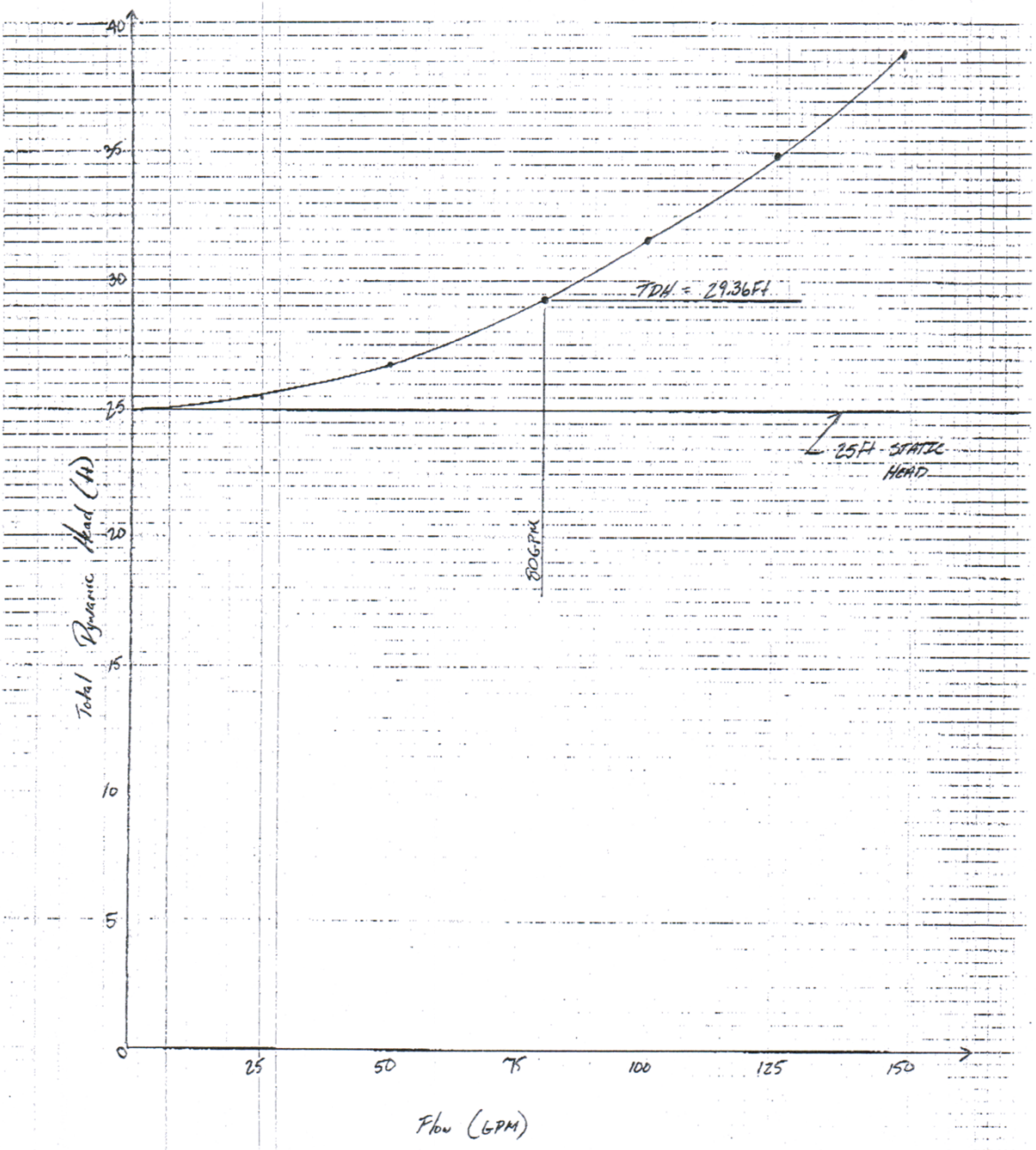
$Q = 150 gal/min \times 2.228 \times 10^{-3} = 0.3342 ft^3/sec$

$V = Q/A = 0.3342/0.087 = 3.84 ft/sec$

ARBOR ENGINEERING, INC.

Job Name: Thornblade Crossing Job No: 97137

Date: 6/25/99 By: JCA



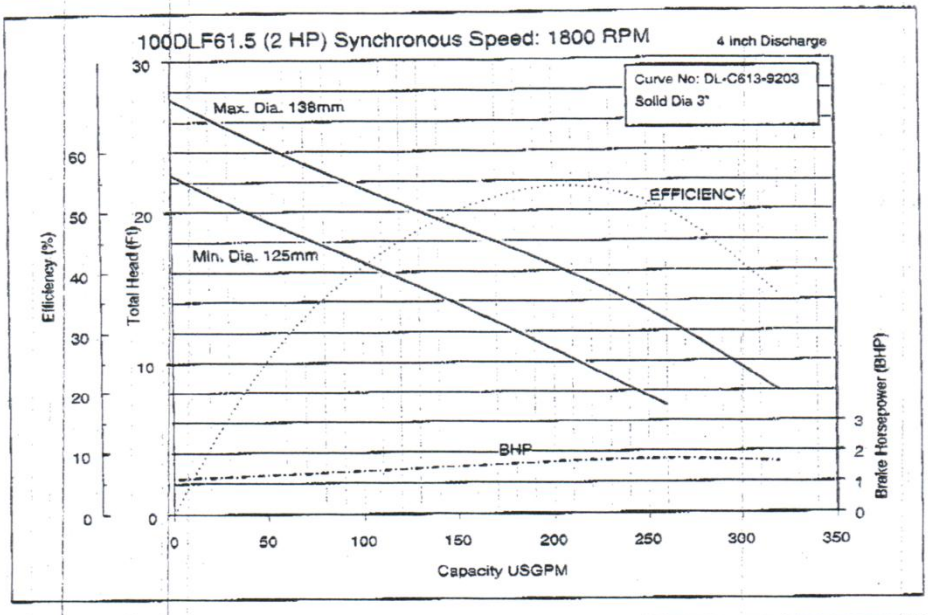
EBARA SUBMERSIBLE SEWAGE PUMPS

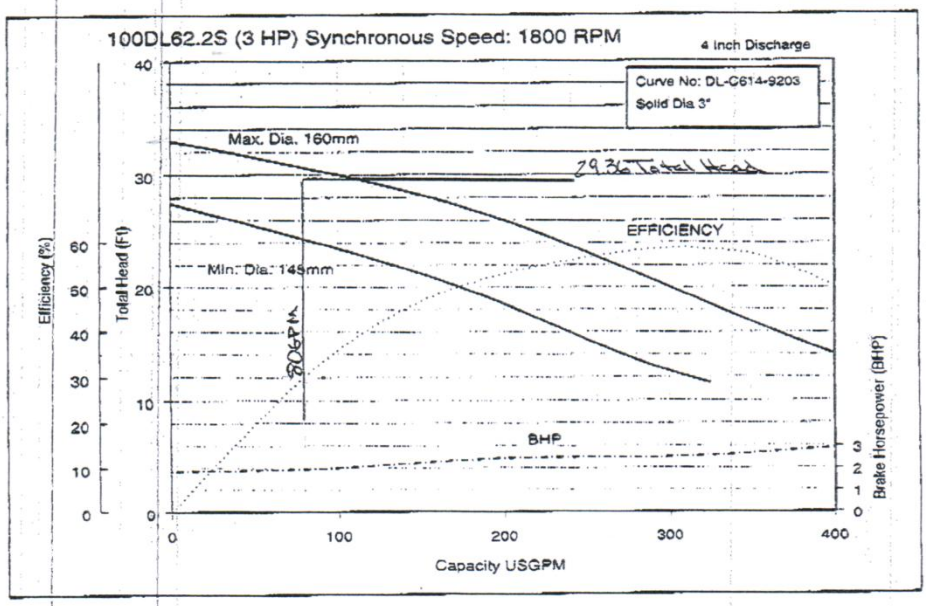
DLFU

PERFORMANCE CURVES

2-174
November 10, 1997

PROJECT: GPM: TDH: EFF: HP: CHK'D: DATE:





EBARA

EBARA INTERNATIONAL CORPORATION

ARBOR ENGINEERING, INC.

Job Name Thornblade Crossing Job No. 97167

Date: 5/26/99 By: JCA

II Cycle Time

GIVEN: 1) 6Ft X 6Ft Wet Well

2) Proposed Flow Rate ⇒ 20,400 GPD (12A×60) = 14.17 GAL/MIN

3) Pumping Rate ⇒ 80 GAL/min

4) 1½Ft wet well Draw Down

A) Cycle Time Based on Future Avg Flow Rate:

(1) Fill Rate @ Future Avg Flow Rate

A) Wet well Volume Per Vertical Foot

⇒ 6Ft X6Ft 30% = 36Ft³ x 7.48 Gal/Ft^3 = 269.28 gal/Ft

B) Wet Well Storage Between Pump On and Pump OFF (1.5Ft)

269.28 Gal/Ft x 1.5Ft = 403.92 gal

C) Time to Fill wet well

Storage / Avg Flow

403.92 gal / 14.17 GAL/MIN = 28.5 min

(2) Pump Run Time ⇒ Pumping Rate = 80 Gal/min

⇒ 403.92 gal / 80 gpm = 5.0 min

(3) Total Cycle Time ⇒ 28.5 min + 5.0 = 33.5 min

(4) Cycles Per Hour ⇒ 60 min/hr / 33.5 min = 1.8 cycles/hr

TOTAL P.09

INTERSTATE UTILITY SALES, INC.
5831-B Fairview Road * Charlotte NC 28210
Telephone (704)367-1970 Fax (704)367-1690

SUBMITTAL DATA

THORNBLADE CROSSING SEWER PUMP STA

contr: R & R Util
engr: Arbor Engr

OKgo 8/24/99

submittal items

submersible pumps
pump bases
control panel
float switches

EBARA SUBMERSIBLE NON CLOG SEWAGE PUMPS

DLFU

Thornblade Crossing Pump Sta

A. General:
Provide submersible sewage pumps suitable for continuous duty operation underwater without loss of watertight integrity to a depth of 65 feet. Pump system design shall include a guide rail system be such that the pump will be automatically connected to the discharge piping when lowered into place on the discharge connection. The pump shall be easily removable for inspection or service, requiring no bolts, nuts, or other fasteners to be disconnected, or the need for personnel to enter the wet well. The motor and pump shall be designed, manufactured, and assembled by the same manufacturer.

B. Manufacturer:
Ebara International Corporation

C. Pump Characteristics: Pumps shall conform to the following requirements:

Pump Model	80DLMF61.5
Number of units	3 (includes one spare)
Design flow (gpm)	80
Design TDH (ft)	30
Shut off head (ft)	42
RPM	1800
HP	2
Wire to water efficiency at design (%)	
Voltage/HZ	230/60
Phase	3

D. Pump Construction:
All major parts of the pumping unit(s) including casing, impeller, suction cover, wear rings, motor frame and discharge elbow shall be manufactured from gray cast iron, ASTM A-48 Class 30. Castings shall have smooth surfaces devoid of blow holes or other casting irregularities. Casing design shall be centerline discharge with a large radius on the cut water to prevent clogging. Units shall be furnished with a discharge elbow and 125 lb. flat face ANSI flange. All exposed bolts and nuts shall be 304 stainless steel. All mating surfaces of major components shall be machined and fitted with NBR o-rings where watertight sealing is required. Machining and fitting shall be such that sealing is accomplished by automatic compression of o-rings in two planes and o ring contact is made on four surfaces without the requirement of specific torque limits. Internal and external surfaces are prepared to SPPC-VISI-SP-3-63 then coated with a zinc-chromate primer. The external surfaces are then coated with a Corothane I Coal Tar paint.

EBARA SUBMERSIBLE
NON CLOG SEWAGE PUMPS

DLFU

1. Impellers:
   a. For units 2 to 5 hp, the impeller shall be radial single or multi-vane, open design. It shall be dynamically balanced and shall be designed for solids handling with a long thrulet without acute turns. The inlet edge of the impeller vanes shall be angled toward the impeller periphery so as to facilitate the release of objects that might otherwise clog the pump. The 2 to 5 hp design shall also include back pump out vanes to reduce the pressure and entry of foreign materials into the mechanical seal area. In addition, a lip seal shall be located behind the impeller hub to further reduce the entry of foreign materials into the seal area. Impellers shall be direct connected to the motor shaft with a slip fit, key driven, and secured with an impeller bolt. The design shall include a replaceable cast iron suction cover. The suction cover shall be designed such that it may be adjusted to maintain working clearances and hydraulic efficiencies.
   b. For units 7 ½ to 30 hp, the impeller shall be a mixed flow multi-vane open design. It shall be dynamically balanced and shall be designed for solids handling with a long thrulet without acute turns. The inlet edge of the impeller vanes shall be angled toward the impeller periphery so as to facilitate the release of objects that might otherwise clog the pump. The 7 ½ to 30 hp design shall also include back pump out vanes to reduce the pressure and entry of foreign materials into the mechanical seal area. In addition, a lip seal shall be located behind the impeller hub to further reduce the entry of foreign materials into the seal area. Impellers shall be direct connected to the motor shaft with a slip fit, key driven, and secured with an impeller bolt. The design shall include a replaceable cast iron suction cover. The suction cover shall be designed such that it may be adjusted to maintain working clearances and hydraulic efficiencies.
   c. High head, 4" units, 40 to 60 hp shall have a radial multi-vane, enclosed impeller design. It shall be dynamically balanced and shall be designed for solids handling with a long thrulet without acute turns. The inlet edge of the impeller vanes shall be angled toward the impeller periphery so as to facilitate the release of objects that might otherwise clog the pump. A lip seal shall be located behind the impeller hub to reduce the entry of foreign materials into the mechanical seal area. Impellers shall be direct connected to the motor shaft with a slip fit, key driven, and secured with an impeller bolt. The design shall include a replaceable casing wear ring at the pump suction to maintain working clearances and hydraulic efficiencies.
   d. For units 6" to 12" discharge sizes, 40 to 60 hp, the impeller shall be a mixed flow multi-vane enclosed design. It shall be dynamically balanced and shall be designed for solids handling with a long thrulet without acute turns. The inlet edge of the impeller vanes shall be angled toward the impeller periphery so as to facilitate the release of objects that might otherwise clog the pump. A lip seal shall be located behind the impeller hub to reduce the entry of foreign materials into the seal area. Impellers shall be direct connected to the motor shaft with a slip fit, key driven, and secured with an impeller bolt. The design shall include replaceable upper and lower case rings to maintain working clearances and hydraulic efficiencies.

2. Mechanical Seals
   a. For units 2 to 5 hp, double mechanical seals operating in an oil bath shall be provided on all units. The oil filled seal chamber shall be designed to prevent over-filling and include an anti-vortexing vane to insure proper lubrication of both seal faces. Lower face materials shall be

silicon carbide, upper faces carbon vs. ceramic, NBR elastomers, and 304SS hardware. Seal system shall not rely on pumping medium for lubrication.

b. Units 7 ½ to 60 hp shall be designed to include a double mechanical seal in a tandem arrangement. Each seal shall be positively driven and act independently with it's own spring system. The upper seal operates in an oil bath, while the lower seal is lubricated by the oil from between the shaft and the seal faces, and in contact with the pumpage on the outside. The oil filled seal chamber shall be designed to prevent over-filling and include an anti-vortexing vane to insure proper lubrication of both seal faces. Lower face materials shall be tungsten carbide, upper faces carbon vs. ceramic, NBR elastomers, and 304SS hardware. Seal system shall not rely on pumping medium for lubrication.

E. Motor Construction:

The pump motor shall be an air filled induction type with a squirrel cage rotor, shell type design, built to NEMA MG-1, Design B specifications. Stator windings shall be copper, insulated with moisture resistant Class F insulation, rated for 311° F. The stator shall be dipped and baked three times in Class F varnish and heat shrunk fitted into the stator housing. Rotor bars and short circuit rings shall be manufactured of cast aluminum. Motor shaft shall be one piece 403SS AISI403 material, rotating on two permanently lubricated ball bearings designed for a minimum B-10 life of 60,000 hours. Motor service factor shall be 1.15 and capable of up to 20 starts per hour. The motor shall be designed for continuous duty pumping at a maximum sump temperature of 104° F. Voltage and frequency tolerances shall be a maximum 10 / 5% respectively. Motor over temperature protection shall be provided by miniature thermal protectors embedded in the windings. Mechanical seal failure protection shall be provided by a mechanical float switch located in a chamber above the seal. This switch shall be comprised of a magnetic float that actuates a dry reed switch encapsulated within the stem. Should the mechanical seal fail, liquid shall be directed into the float chamber, in which the rising liquid activates the switch opening the normally closed circuit. For units 2-10 hp the float body and float shall be a polypropylene material with a 316SS stopper. Units 15 hp and greater, the float switch components shall be 304ss. The motor shall be non overloading over the entire specified range of operation and be able to operate at full load intermittently while unsubmerged without damage to the unit.

Power cable jacket shall be manufactured of an oil resistant chloroprene rubber material, designed for submerged applications. Cable shall be watertight to a depth of a least 65'. The cable entry system shall comprise of primary, secondary, and tertiary sealing methods. The primary seal shall be achieved by an cylindrical elastomeric grommet compressed between the motor cover and a 304SS washer. Secondary sealing is accomplished with a compressed o-ring made of NBR material. Compression and subsequent sealing shall preclude specific torque requirements. The system shall also include tertiary sealing to prevent leakage into the motor housing due to capillary action through the insulation if the cable is damaged or cut. The cable wires shall be cut, stripped, re-connected with a copper butt end connector, and embedded in epoxy within the cable gland. This provides a dead end for leakage through the cable insulation into the motor junction area. . The cable entry system shall be the same for both the power and control cables.

EBARA SUBMERSIBLE
NON CLOG SEWAGE PUMPS

DLFU

The QDC shall be manufactured of cast iron, A48 Class 30. It shall be designed to adequately support the guide rails, discharge piping, and pumping unit under both static and dynamic loading conditions with support legs that are suitable for anchoring it to the wetwell floor. The face of the inlet QDC flange shall be perpendicular to the floor of the wetwell. The discharge flange of the QDC shall conform to ANSI B16.1 Class 125.

The pump design shall include an integral self-aligning sliding bracket. Sealing of the pumping unit to the QDC shall be accomplished by a single, linear, downward motion of the pump. The entire weight of the pump unit shall be guided to and wedged tightly against the inlet flange of the QDC, making metal to metal contact with the pump discharge forming a seal without the use of bolts, gaskets or o-rings.

Lifting chain shall be provided, suitable for removing and installing the pump unit.

MOTOR WIRING DIAGRAM

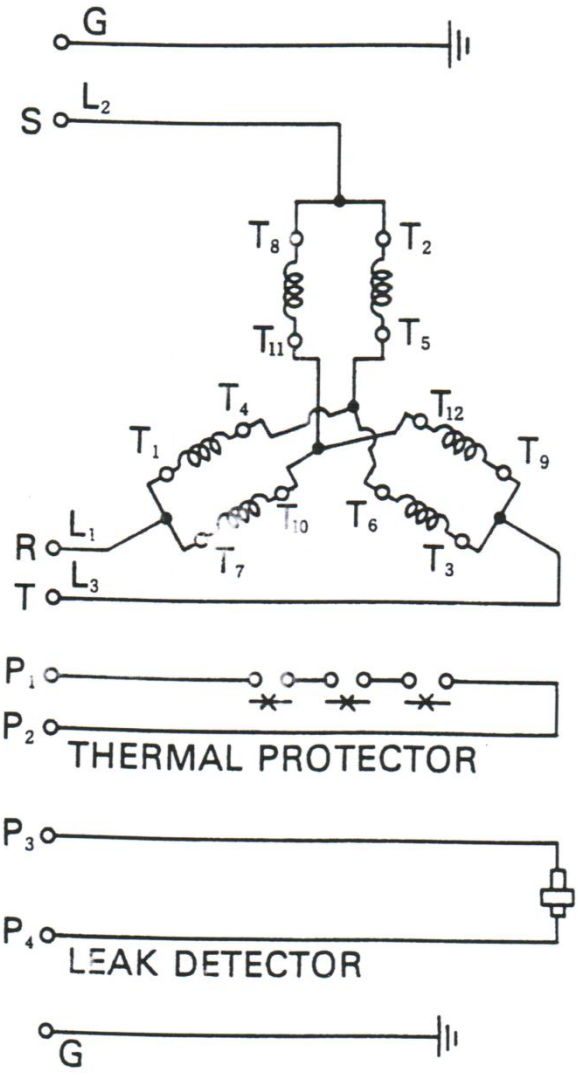
2-328
November 10, 1997

PROJECT: MODEL: CHK'D: DATE:

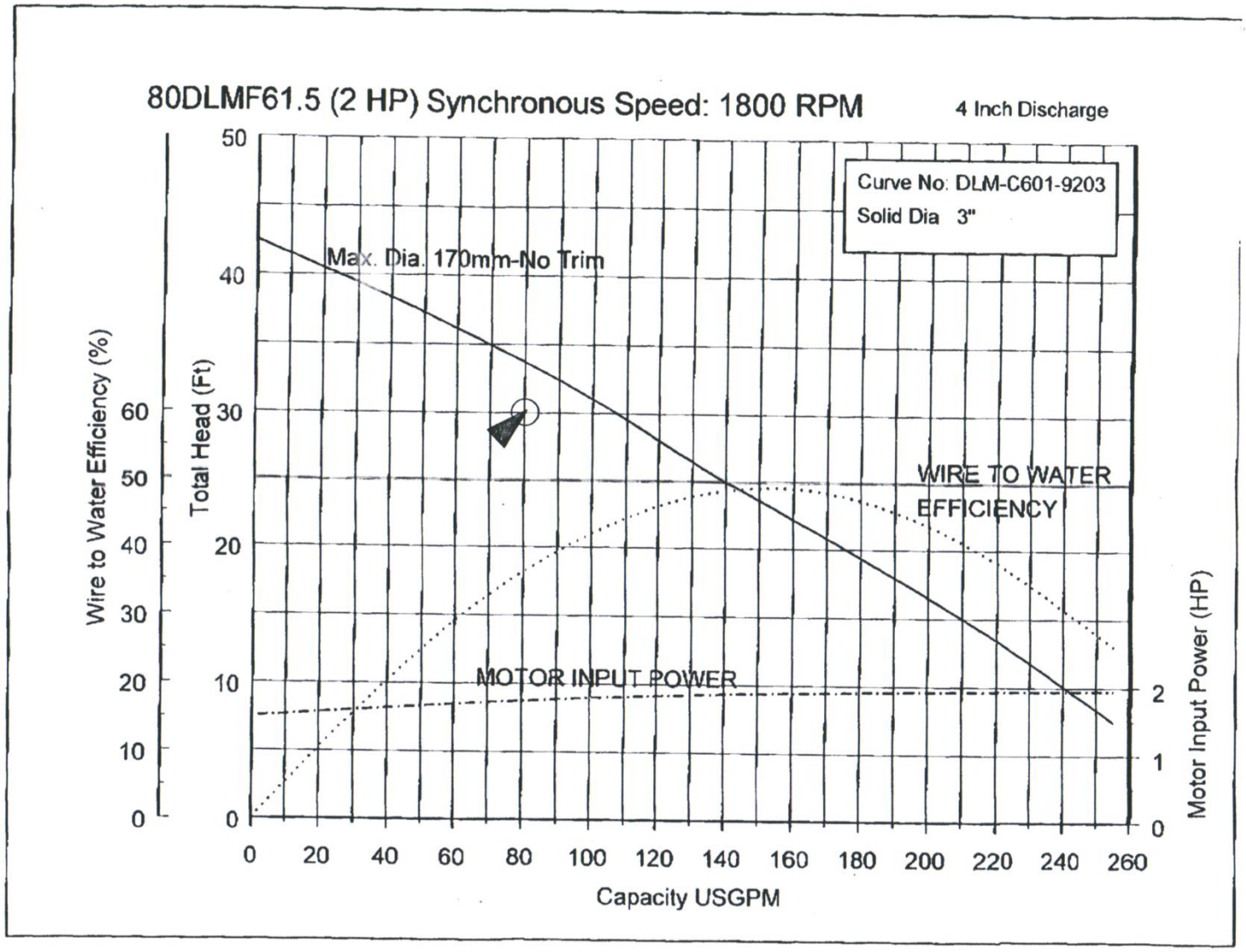
■ Manual Operation Type

- **Models DLFU, DVFU**
- **Output 2 to 10HP**

208/230V



G – GRN
L1 – RED – T1 – T
L2 – WHT – T2 – T
L3 – BLK – T3 – T
P1 – RED
P2 – WHT
P3 – BLK
P4 – OR
G – GRN


80DLMF61.5 (2 HP) Synchronous Speed: 1800 RPM
4 Inch Discharge
Curve No: DLM-C601-9203
Solid Dia 3"
Max. Dia. 170mm-No Trim
WIRE TO WATER EFFICIENCY
MOTOR INPUT POWER
Wire to Water Efficiency (%)
Total Head (Ft)
Motor Input Power (HP)
Capacity USGPM
0
10
20
30
40
50
60
0
20
40
60
80
100
120
140
160
180
200
220
240
260
0
1
2

ELECTRICAL DATA

PROJECT: MODEL: CHK'D: DATE:

MODELS DLFU, DVFU

THREE PHASE

2 to 10HP, 60HZ, 208/230 VOLT

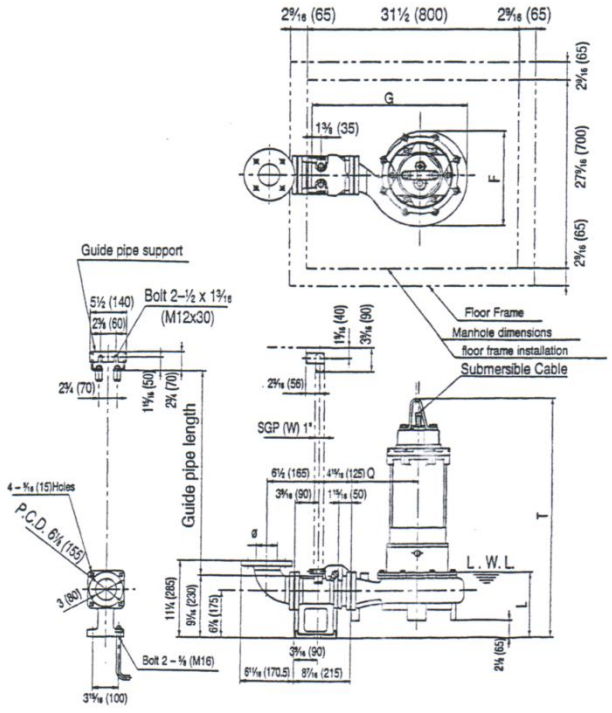
FM Explosion Proof Option ☐

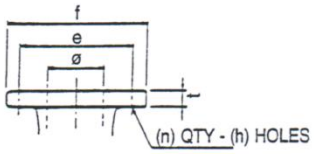
Name-Plate Rating	Model		ZDLX (DL)	ZDLX (DL)	ZDLX (DL)	ZDLX (DL)	ZDLX (DL)
	Output	HP	2	3	5	7½	10
		kW	1.5	2.2	3.7	5.5	7.5
	Phase		3	3	3	3	3
	Poles		4	4	4	4	4
	Volts	V	208/230	208/230	208/230	208/230	208/230
	Amperes	A	6.8/6.6	9.2/9.2	15.0/14.2	22.4/21.6	31.2/29.2
	Speed	min^{-1}	1720/1740	1730/1740	1720/1740	1735/1745	1735/1745
	Insulation Class		F	F	F	F	F
Capacity of Capacitor μF	Start		—	—	—	—	—
	Run		—	—	—	—	—
No Load Test	Amperes		3.8/4.4	3.8/5.0	4.8/6.1	7.0/8.5	9.8/12.5
	Watts		200/240	250/350	300/400	275/348	386/502
Resistance at 20°C OHMS			1.54	1.59	0.97	0.49	0.37
100% Load	Current	Amp.	6.80/6.60	9.20/9.20	15.0/14.2	22.4/21.6	31.2/29.2
	Efficiency	%	75.0/77.6	77.5/76.3	78.9/80.0	78.8/75.7	76.8/76.9
	Power Factor	%	81.5/73.4	85.6/78.6	86.7/81.7	86.4/84.3	86.8/83.7
	Speed	min^{-1}	1722/1742	1733/1747	1725/1742	1736/1745	1735/1746
Locked Rotor Torque		%	327/407	255/314	240/296	167/203	188/229
Start Current		Amp.	42.7/47.3	56.5/63.0	88.0/98.0	115.4/128.5	160.2/177.0
Vibration		Micron	15	15	15	15	15
Noise		Phon (50cm)	65	65	65	65	65
Number Starts Per Hour			20	20	20	20	20
Design Standard			NEMA (EQUIVALENT)				
Voltage Tolerance		%	± 10				
Frequency Tolerance		%	± 5				
(Ref. data Mft's Symbols)			EB	EB	EB	EM	EM

PROJECT: MODEL: CHK'D: DATE:

MODEL DLFU WITH QUICK DISCHARGE CONNECTOR

80DLMFU, 2 to 7½HP





● FLANGE (ANSI 125 PSI F.F)

inch

ø	e	f	t	n	h
2	4¾	6	⅝	4	¾
3	6	7½	¾	4	¾
4	7½	9	15⁄16	8	¾

mm

ø	e	f	t	n	h
50	121	152	15.9	4	19
80	152	191	19	4	19
100	191	229	23.8	8	19

■ DIMENSIONS : inch

PHASE	SIZE ø	PUMP MODEL	OUTPUT kW	OUTPUT HP	Q.D.C. MODEL	PUMP & MOTOR F	G	L	Q	T	WEIGHT Lb PUMP	Q.D.C.
THREE		80DLMFU61.5	1.5	2	LM80	11½	20⁵⁄₁₆	9¹³⁄₁₆	8¼	31¹⁄₁₆	157	38
		80DLMFU62.2	2.2	3	LM80	11½	20⁵⁄₁₆	9¹³⁄₁₆	8¼	32¹⁄₁₆	188	38
		80DLMFU63.7	3.7	5	LM80	12⅛	21	9¹³⁄₁₆	8¹¹⁄₁₆	33⅜	206	38
		80DLMFU65.5	5.5	7½	LM80	12¹⁵⁄₁₆	22	12⅝	9¼	38¾	303	38

■ DIMENSIONS : (mm)

PHASE	SIZE ø	PUMP MODEL	OUTPUT kW	OUTPUT HP	Q.D.C. MODEL	PUMP & MOTOR F	G	L	Q	T	WEIGHT kg PUMP	Q.D.C.
THREE	3	80DLMFU61.5	1.5	2	LM80	292	516	250	210	788.5	71	17
		80DLMFU62.2	2.2	3	LM80	292	516	250	210	815	85	17
		80DLMFU63.7	3.7	5	LM80	308	534	250	220	854	93	17
		80DLMFU65.5	5.5	7½	LM80	328	559	320	235	984	137	17

Exhibit N 5

Wastewater Construction Permit

Bureau of Water

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Permission is hereby granted to: Poinsett Development
Attn: Tad Smith
205 East Stone Ave.
Greenville, SC 29609

for the construction of a sanitary sewer system in accordance with the construction plans, specifications, engineering report and the Construction Permit Application signed by Thomas M. Keith, Jr., Registered Professional Engineer, S.C. Registration Number: 7697.

Project Name: THORNBLADE CROSSING PHASE 2 **County:** Greenville
Location: South Batesville Rd, River Rd & East Coleman Rd.

Project Description: 114 LF of 8" DIP gravity sewer, 1181 LF of 8" PVC gravity sewer, 10 manholes, 713 LF of 4" DIP force main and a pump station to serve 76 three bedroom units, 42 two bedroom units and a clubhouse.

The wastewater will be discharged to the WCRSA/PELHAM WWTP treatment facility, (NPDES Permit SC0033804) at a design flow rate of 48000 gallons per day.

Special Conditions:

1. All construction/materials for this project must conform to the Standard Specifications for ARBOR ENGINEERING, INC. approved on 01/03/89.
An approval to place in operation cannot be granted for this project until Condor Environmental has been registered with the Public Service Commission.

In accepting this permit, the owner agrees to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection.

This is a permit for construction only and does not constitute State Department of Health and Environmental Control approval, temporary or otherwise, to place the system in operation. An Approval to Place in Operation is required and can be obtained following the completion of construction by contacting the EQC Appalachia II District Office at (864) 241-1090. Additional permits may be required prior to construction (e.g., stormwater).

Permit Number: 24,489-WW
Date of Issue: July 09, 1999
Expiration Date: Construction must begin prior to July 08, 2001 and be completed prior to July 08, 2002, or this permit will expire.

Jeffrey P. deBessonet, P.E., Director
Water Facilities Permitting Division